

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of:

Adrian P. Wise

Filed: February 6, 2001

For: MULTISTANDARD VIDEO  
 DECODER AND DECOMPRESSION  
 SYSTEM FOR PROCESSING  
 ENCODED BIT STREAMS INCLUDING A  
 DECODER WITH TOKEN GENERATOR  
 AND METHODS RELATING THERETO

§ Application No.: Not Yet Known *HJ*  
 § Art Unit: 2783 (anticipated)  
 § Examiner: Follansbee, J. (anticipated)  
 § Attorney Docket No.:  
 94100420(EP)USC1X1C1D9 PDDD

11033 U.S. PRO  
 09/777283  
 02/06/01


**COMMUNICATION - SUBMISSION OF FORMAL DRAWINGS**

BOX PATENT APPLICATION  
 Assistant Commissioner of Patents  
 Washington DC 20231

Sir:

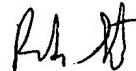
FILING OF CORRESPONDENCE BY EXPRESS MAIL UNDER 37 C.F.R. § 1.10	
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Transmitted herewith are 169 formal drawings on 124 sheets.

In the event a fee is due, the Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment to Deposit Account No. 04-1175.

Respectfully submitted,

DISCOVISION ASSOCIATES



Richard Stokey  
 Reg. No. 40,383

Date: 2/6/01  
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 INTELLECTUAL PROPERTY DEVELOPMENT  
 P.O. Box 19616  
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 (949) 660-5006

RS:sd

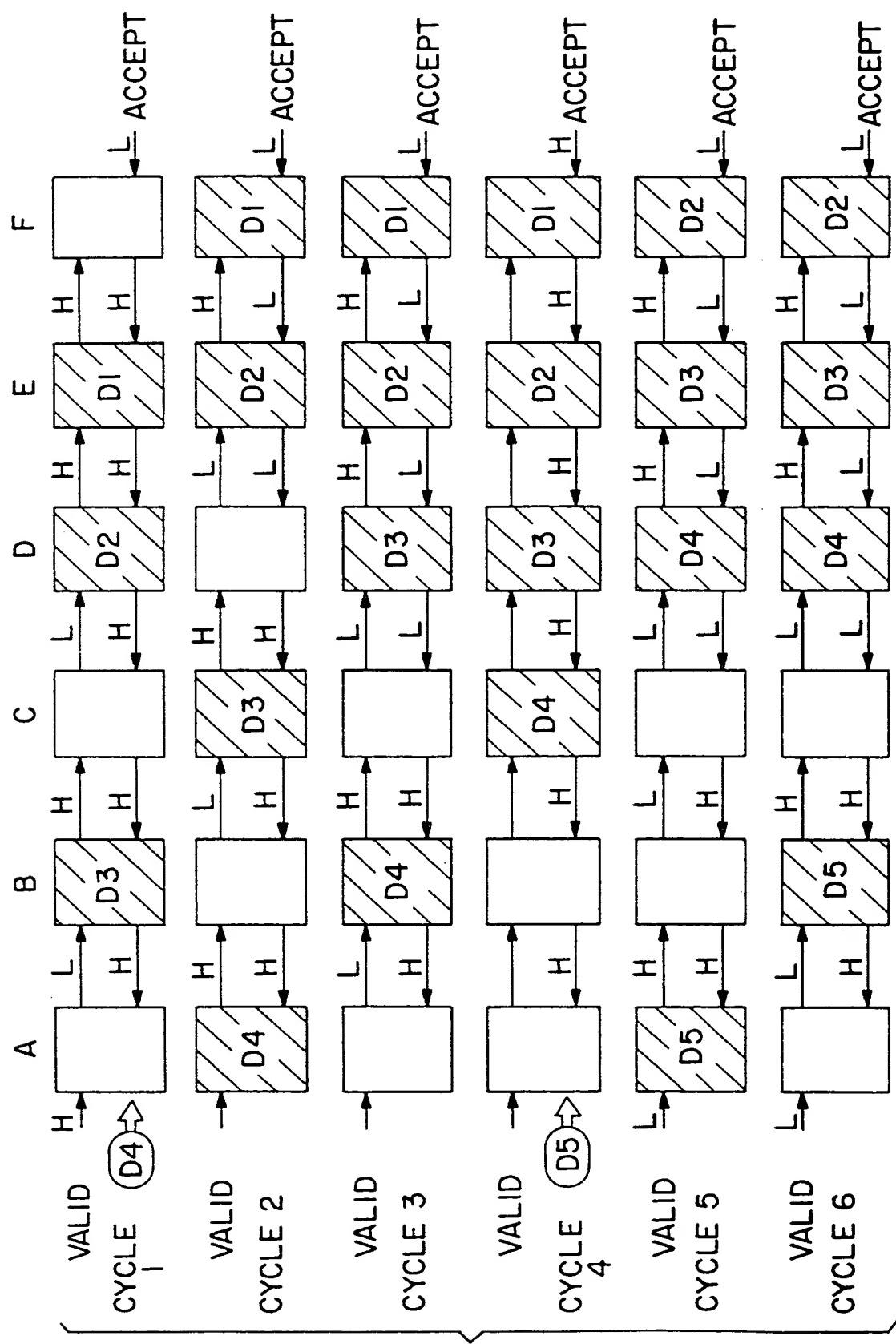


FIG. I

FIG. 2(A)

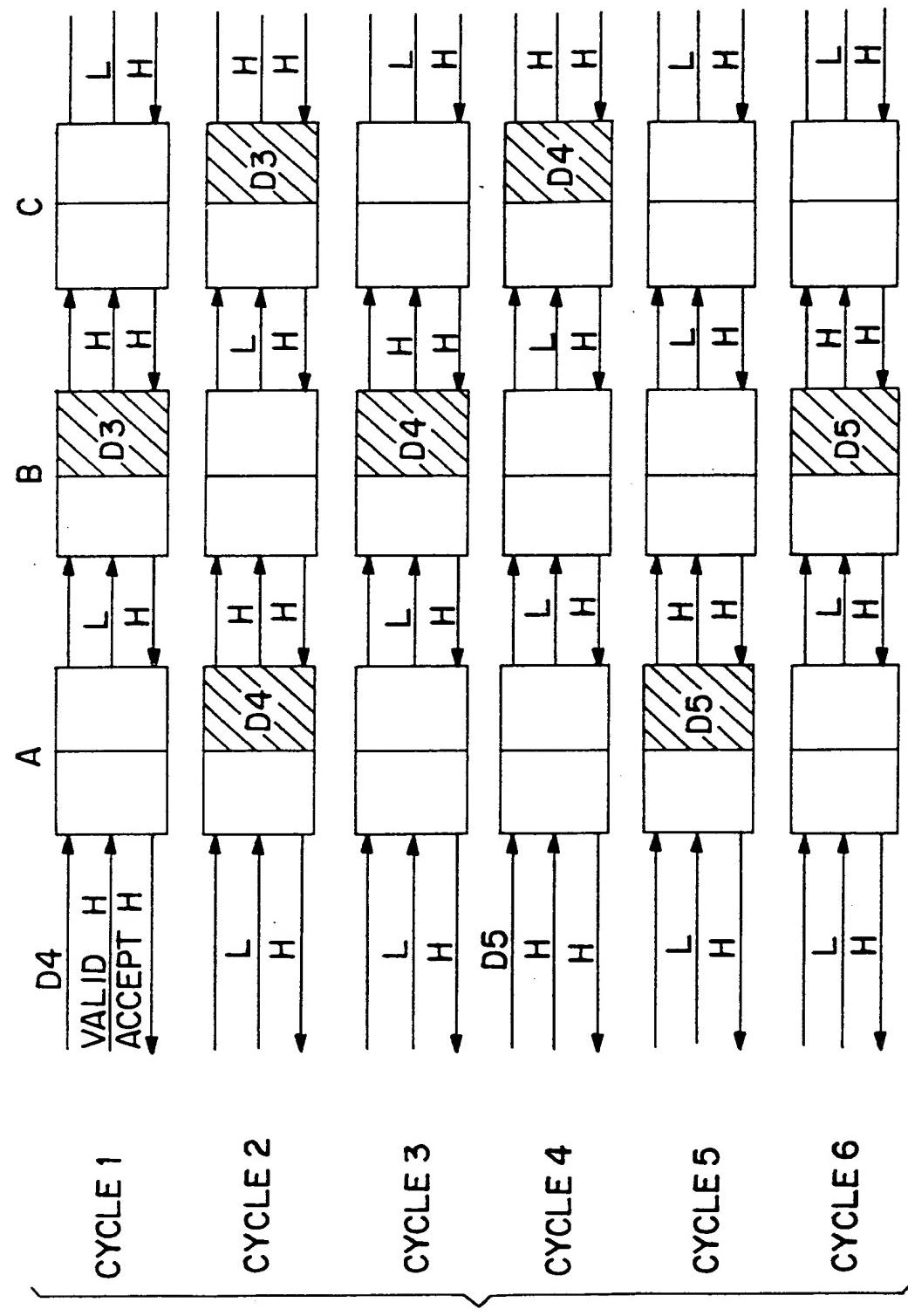
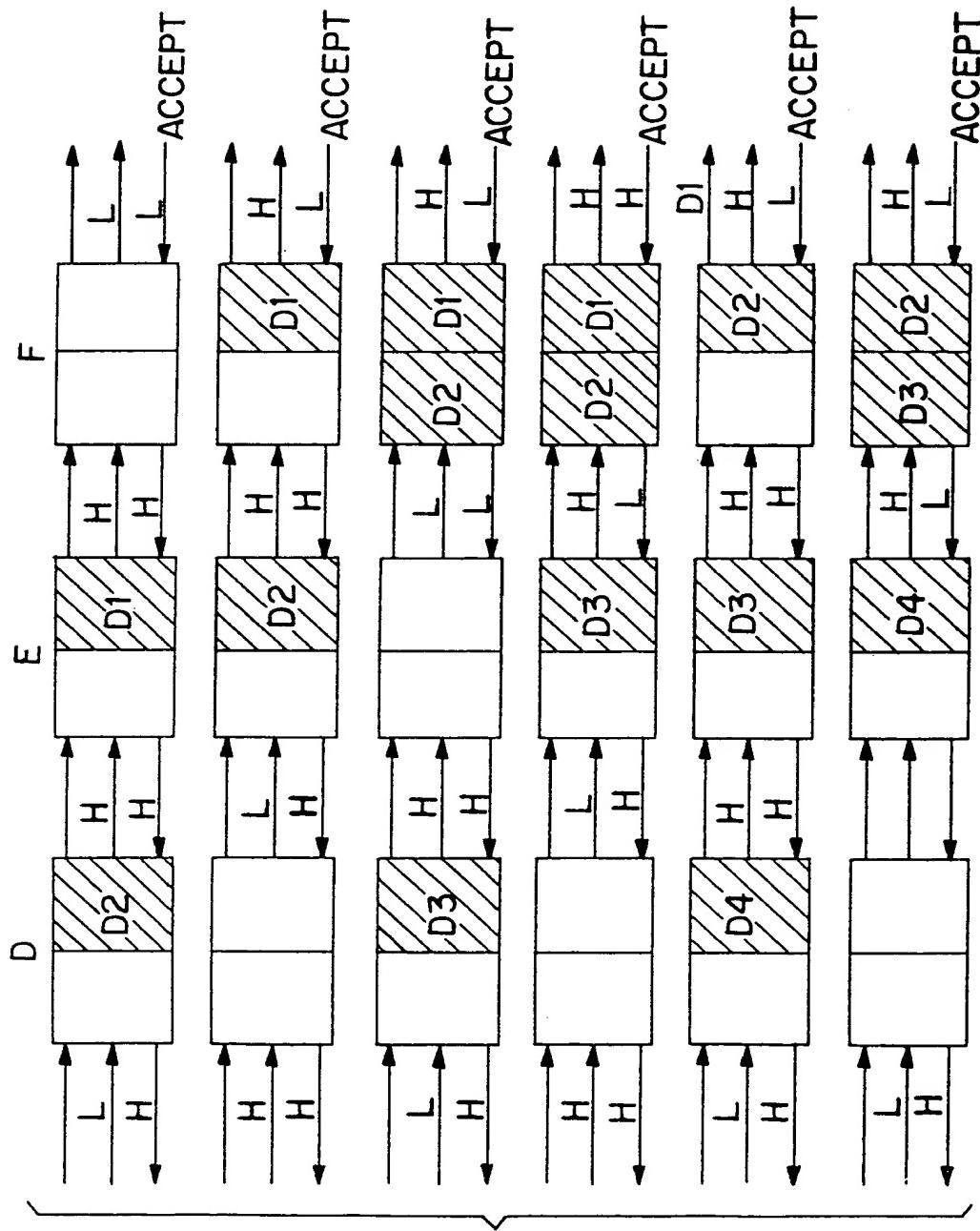


FIG. 2(B)



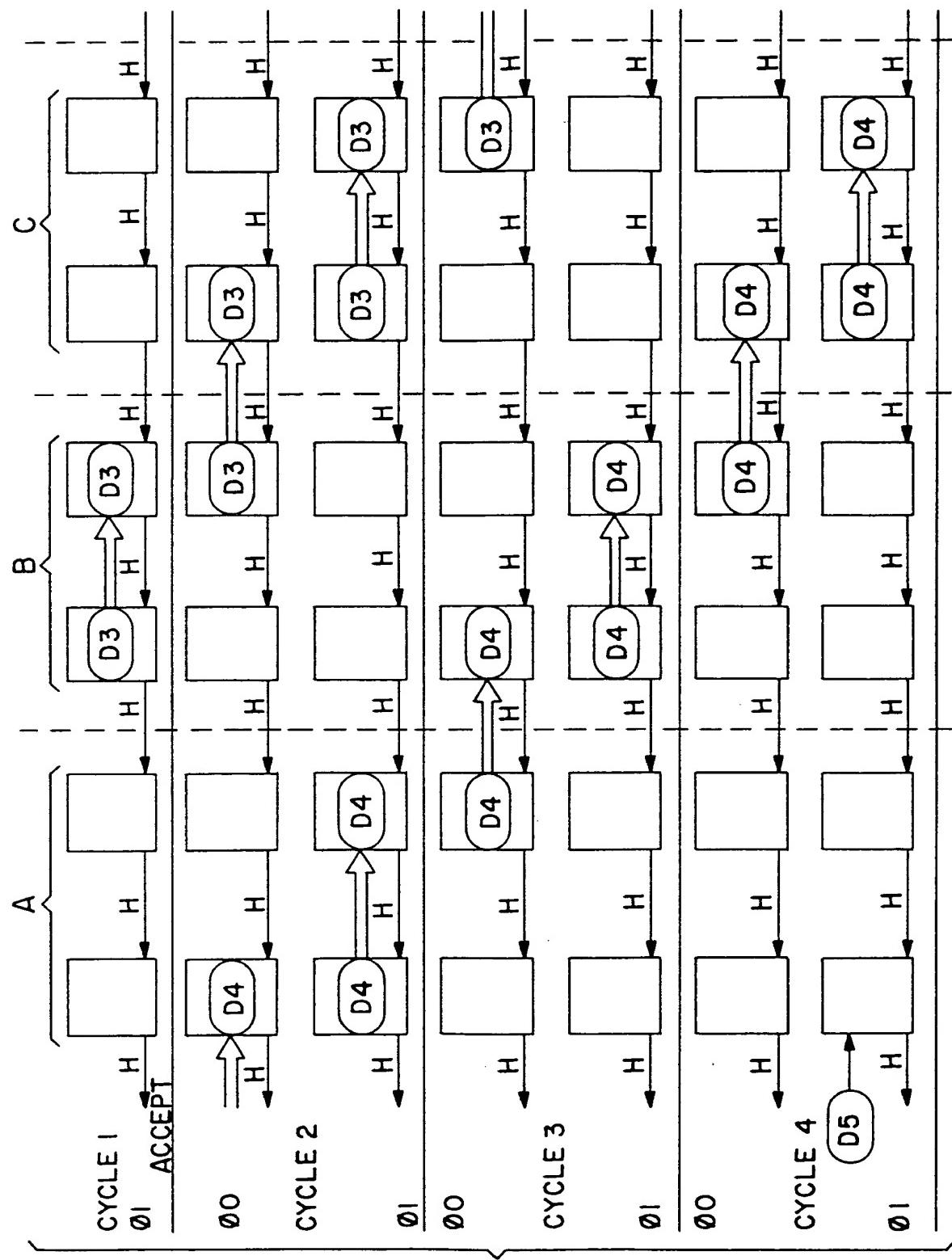
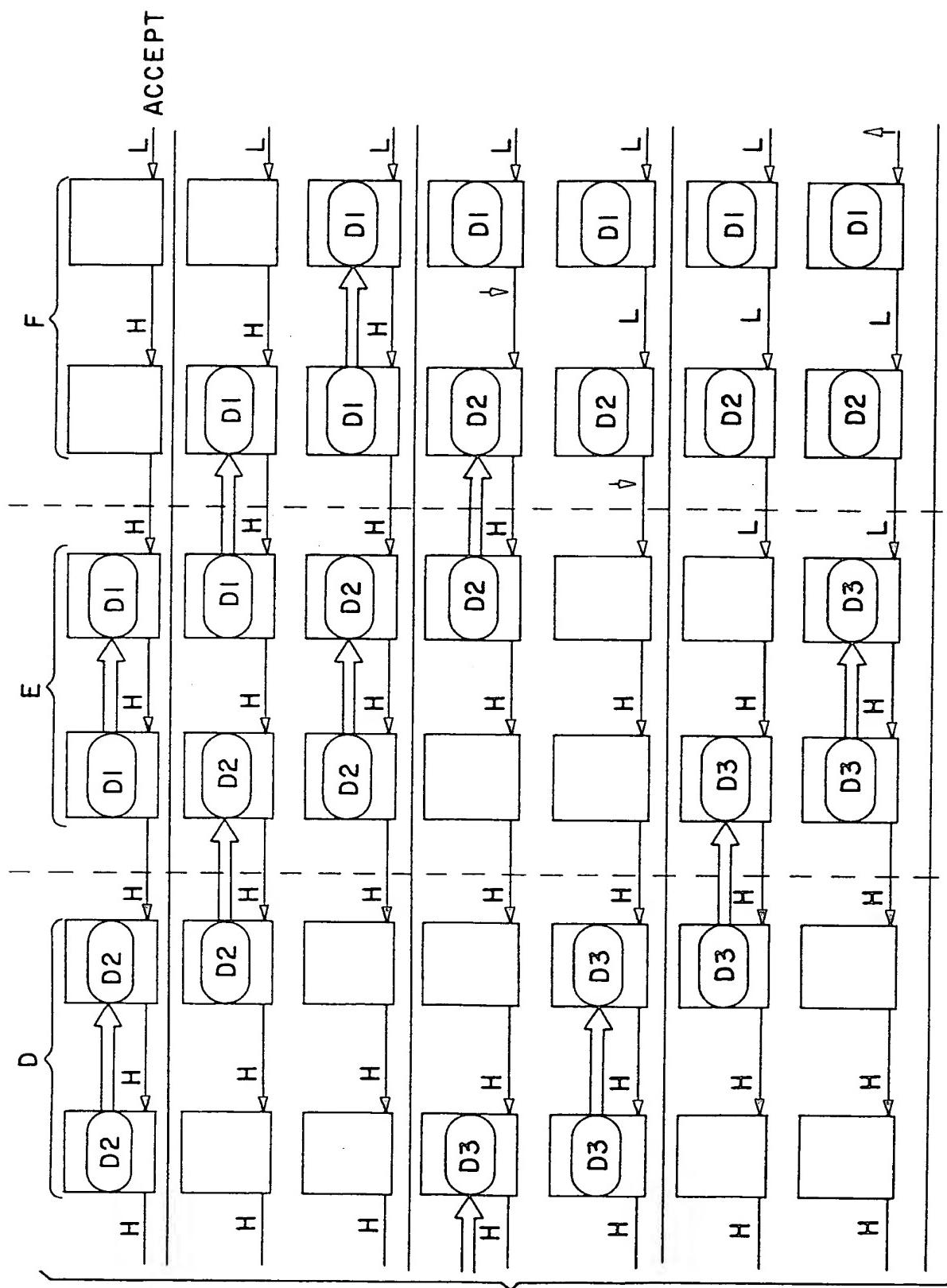


FIG. 3A-1

FIG. 3A-2



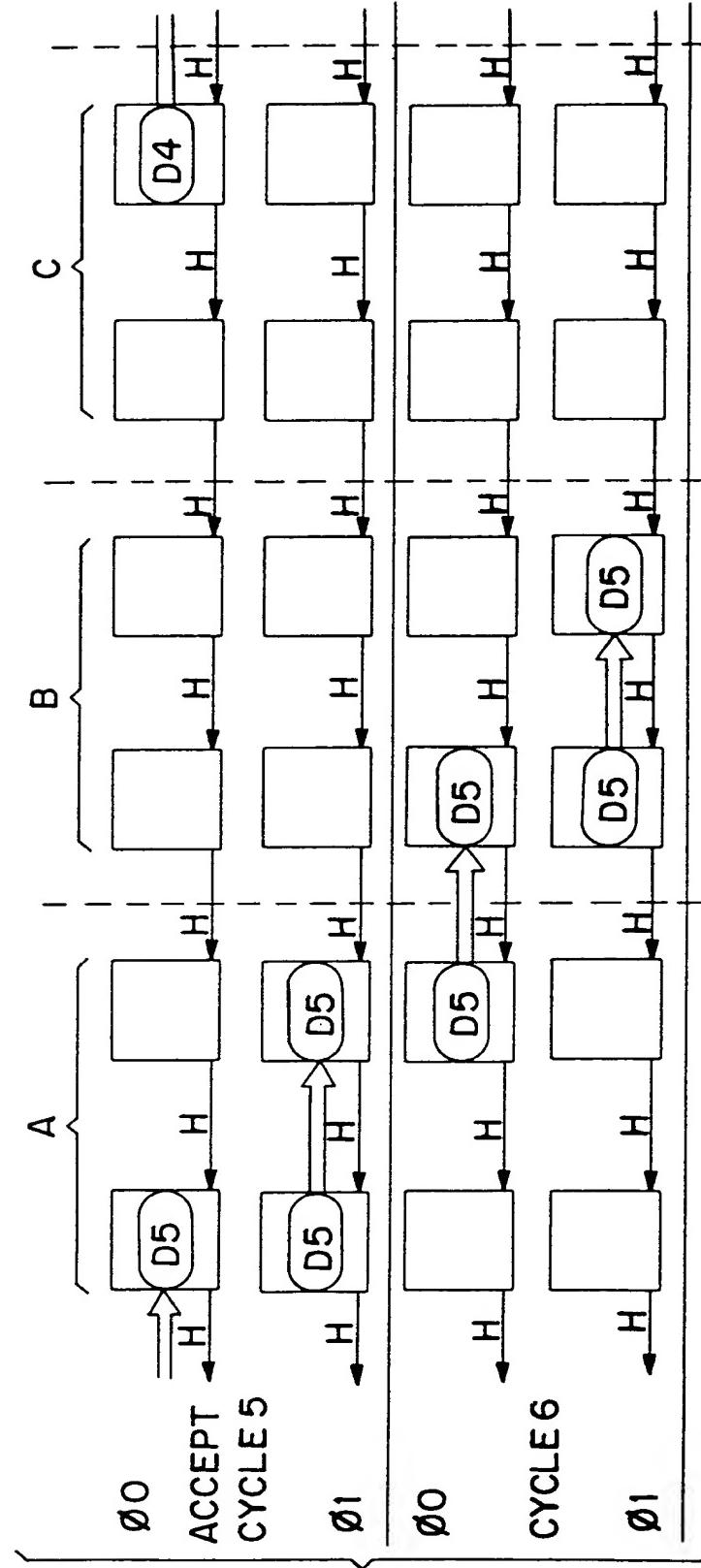


FIG. 3B-1

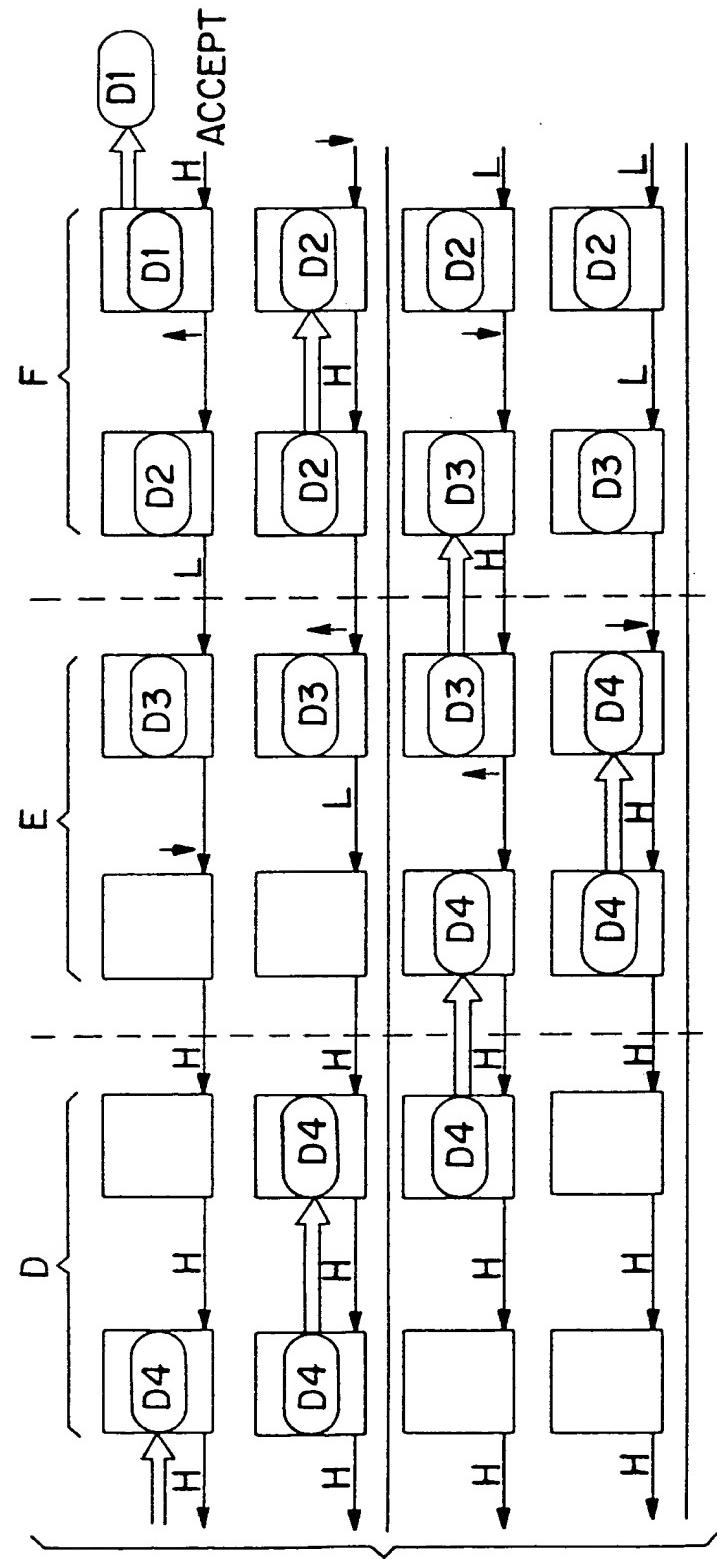


FIG. 3B-2

FIG. 4

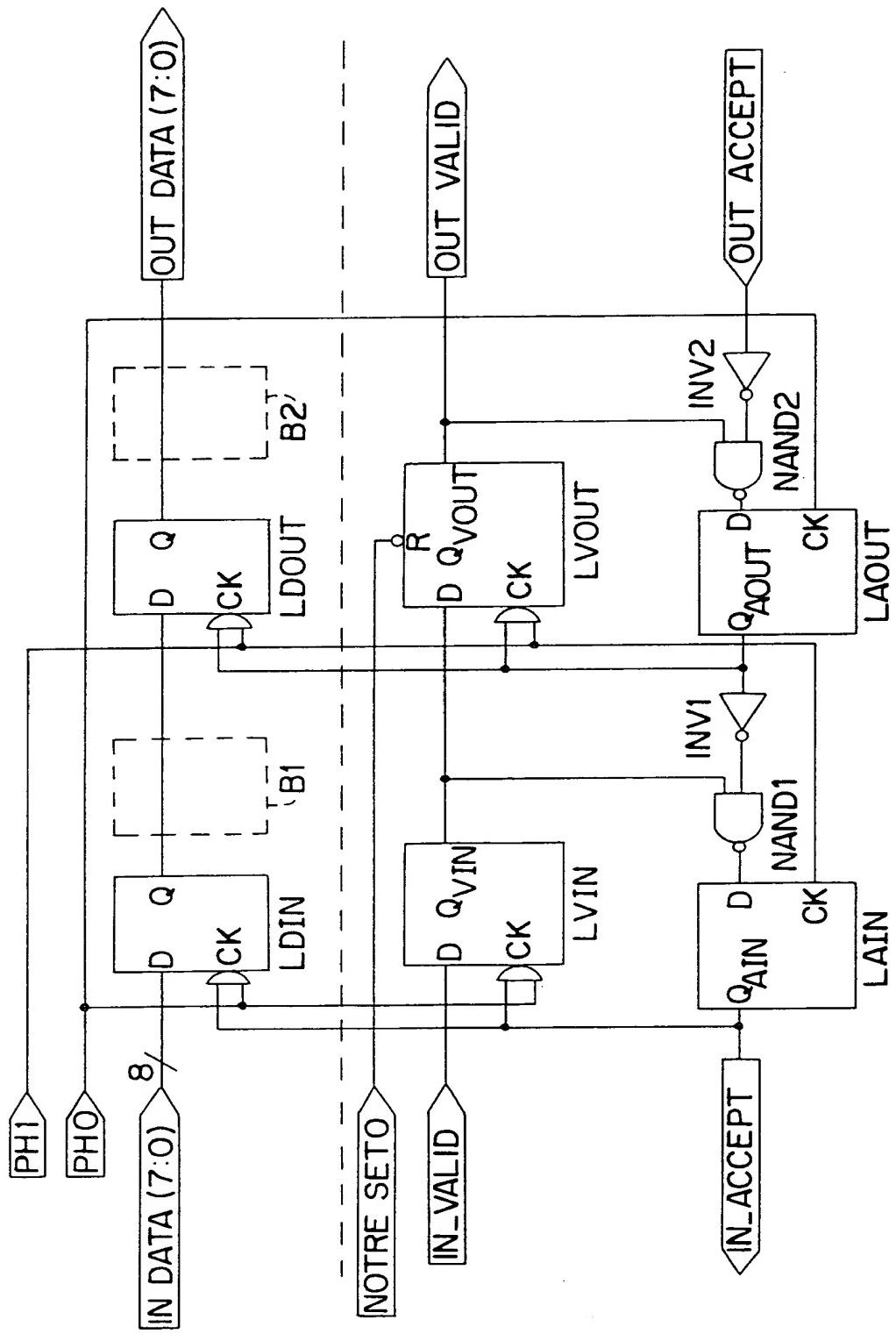
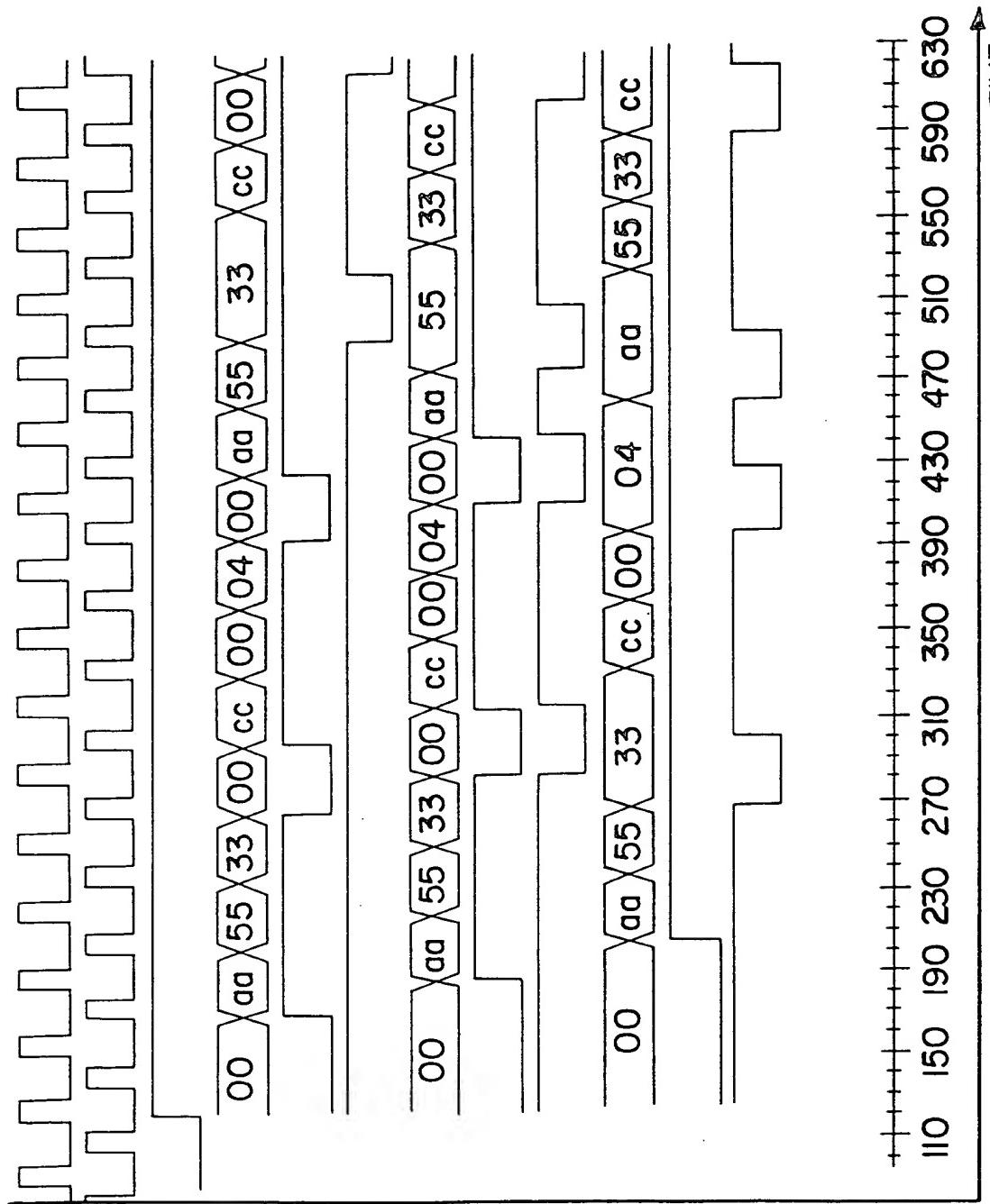


FIG. 5(A)



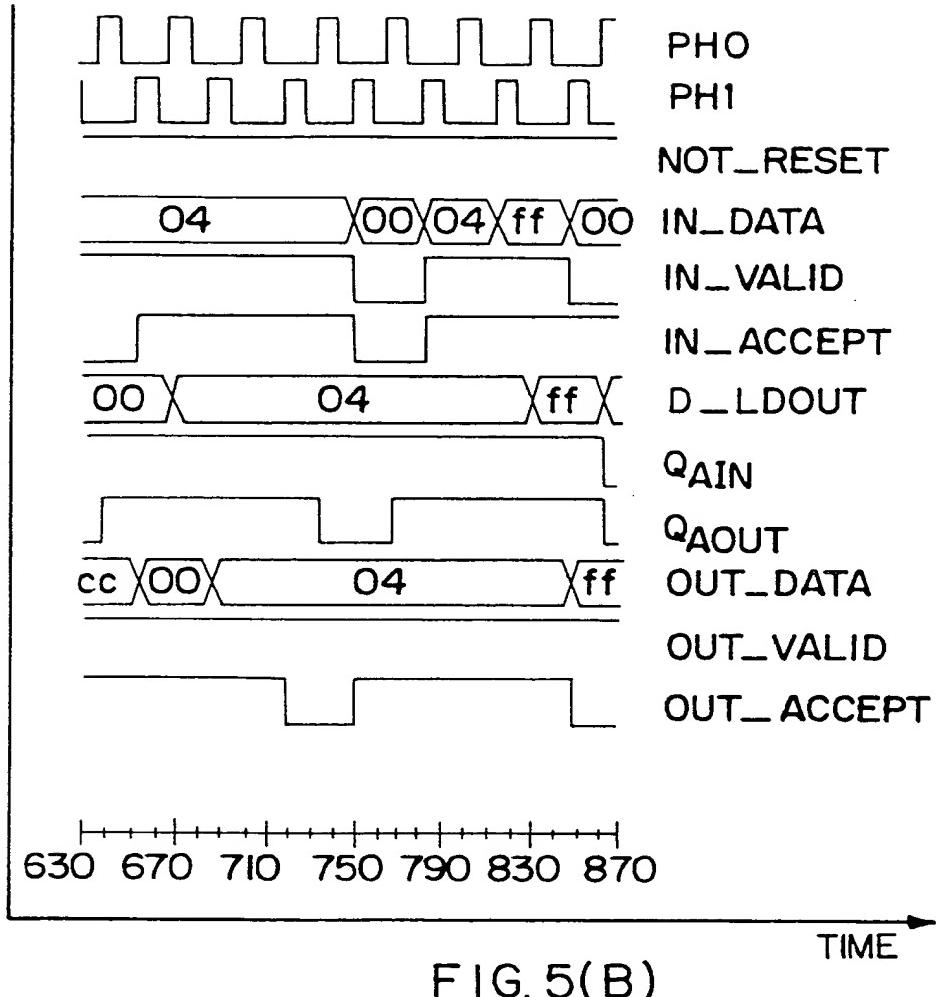


FIG. 5(B)

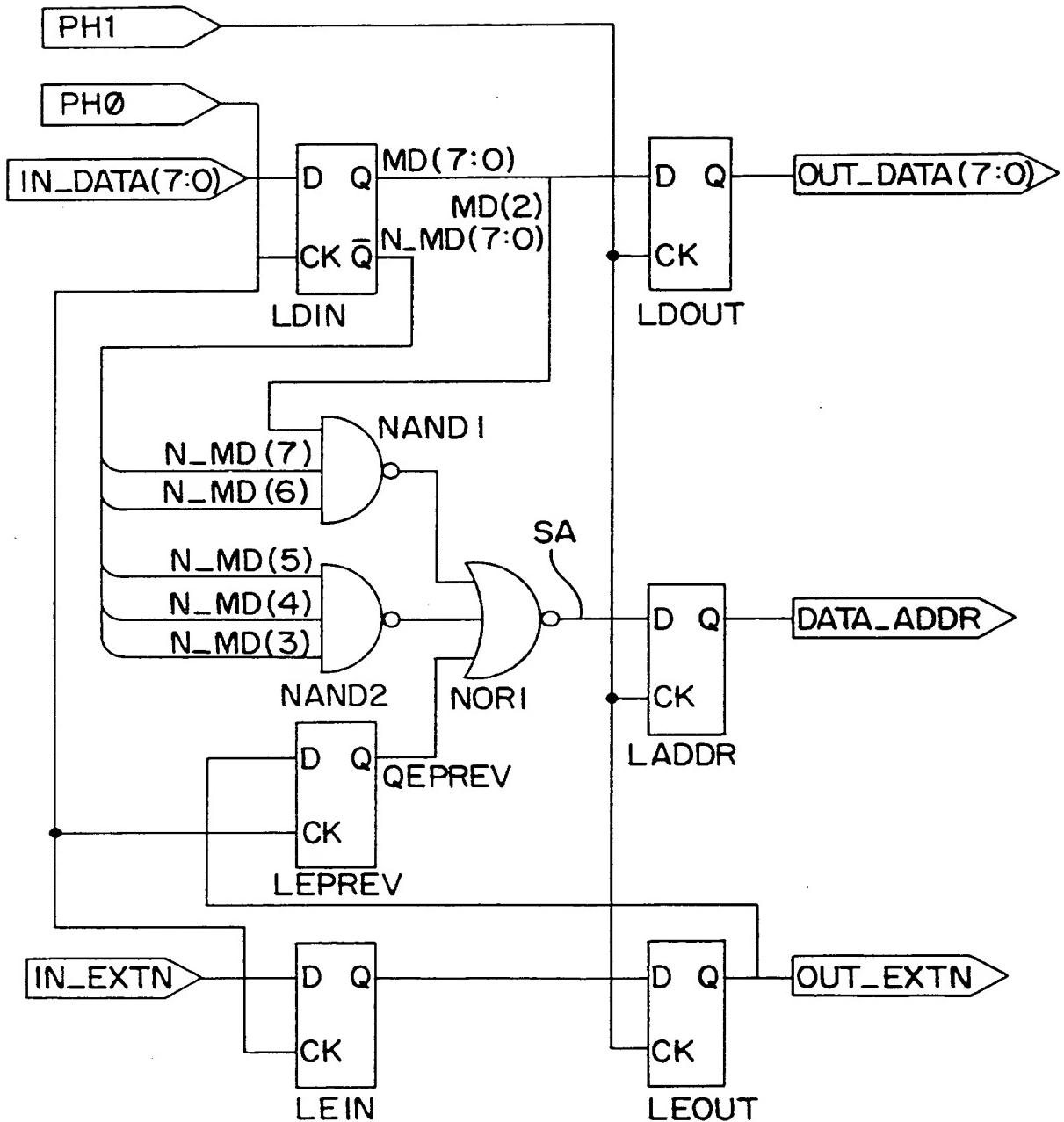


FIG. 6

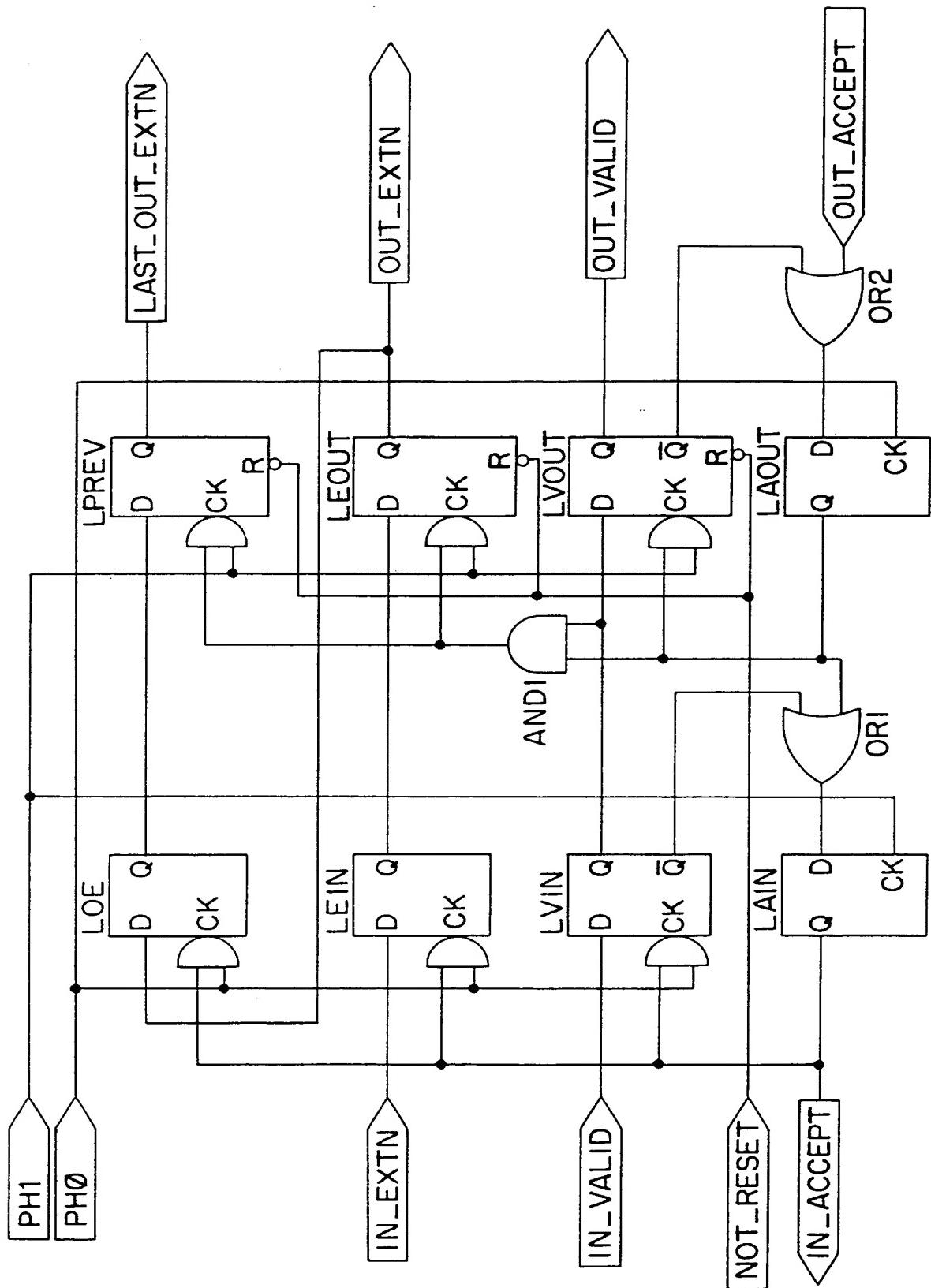


FIG. 7

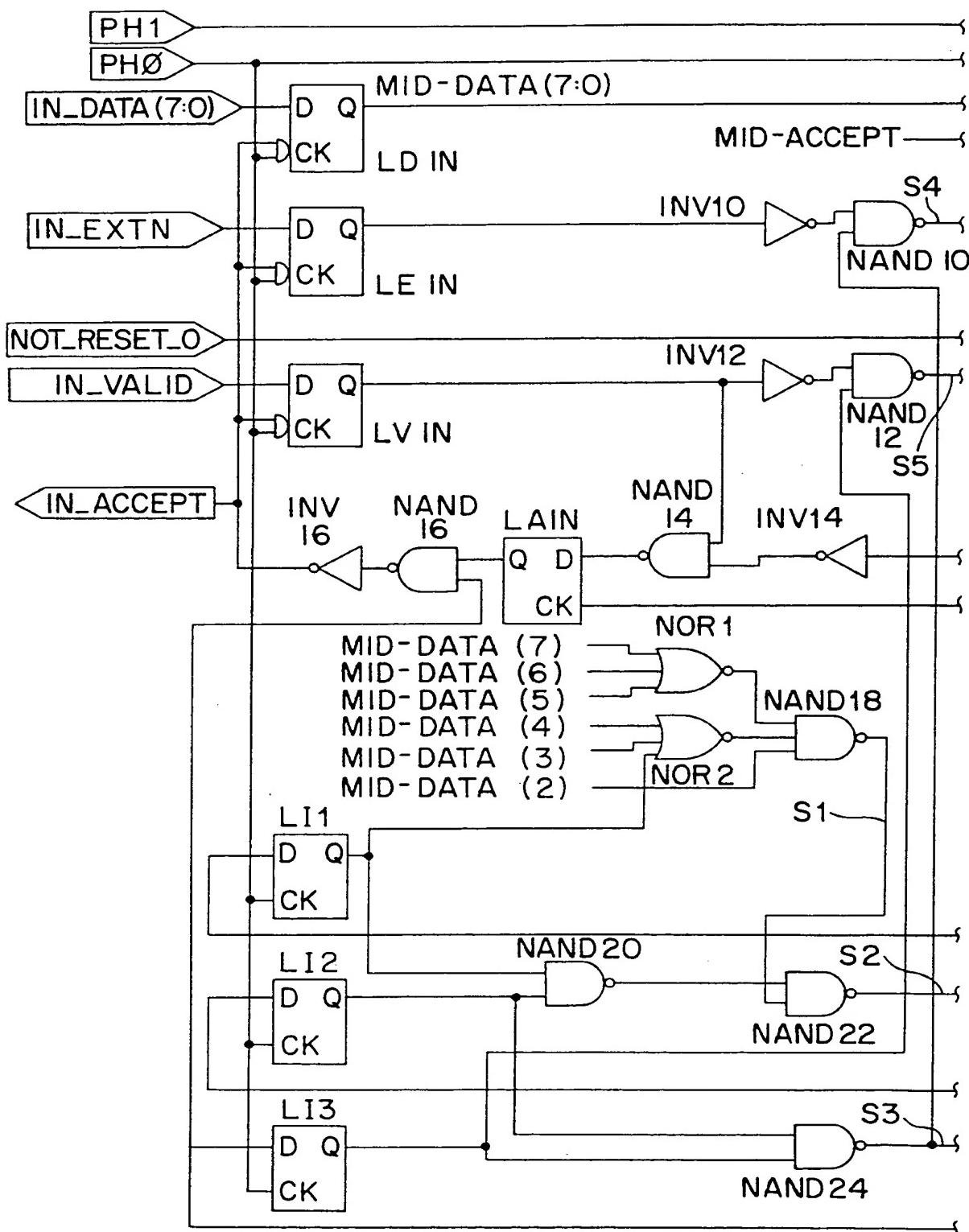


FIG. 8(A)

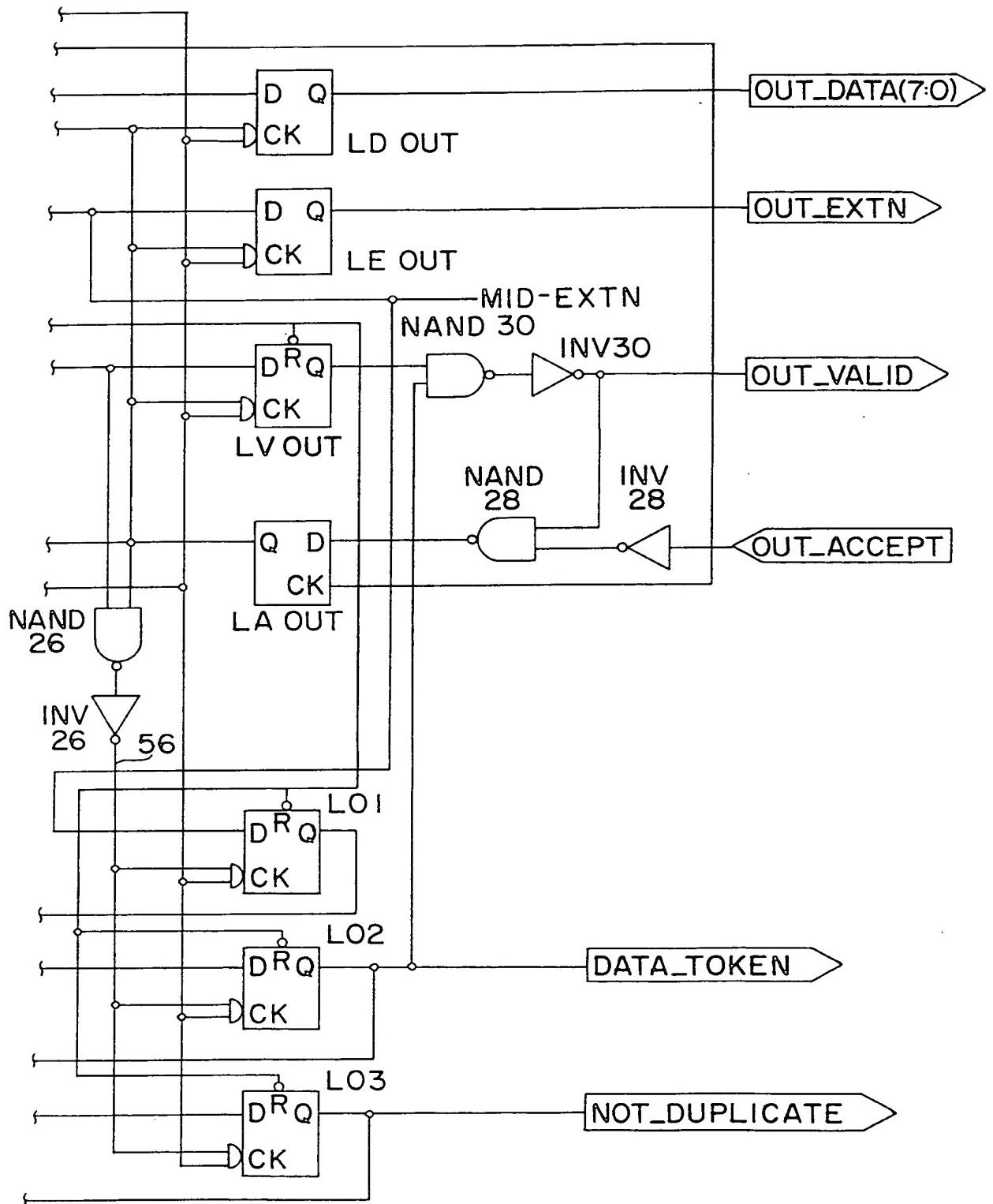


FIG. 8(B)

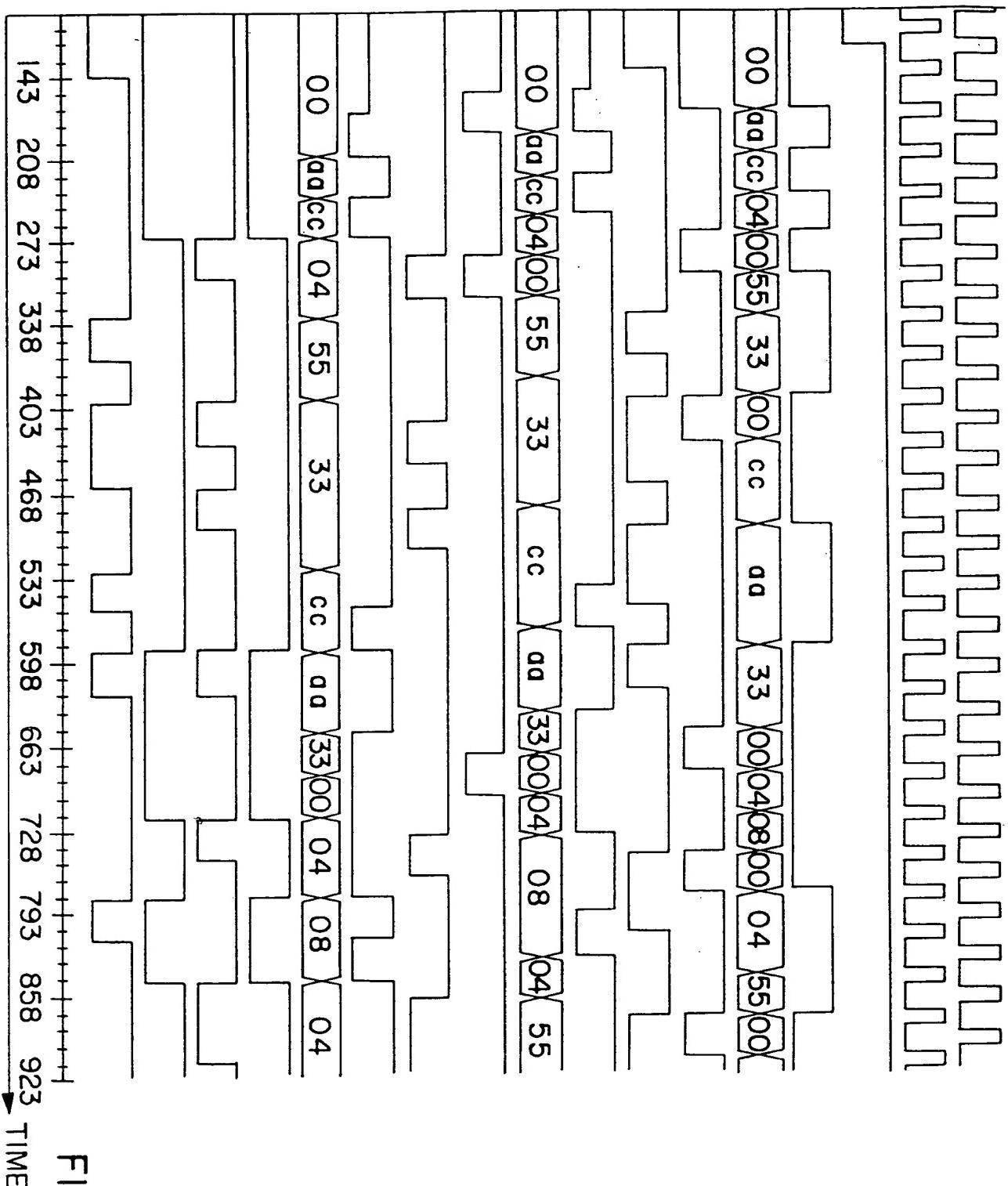


FIG. 9(A)

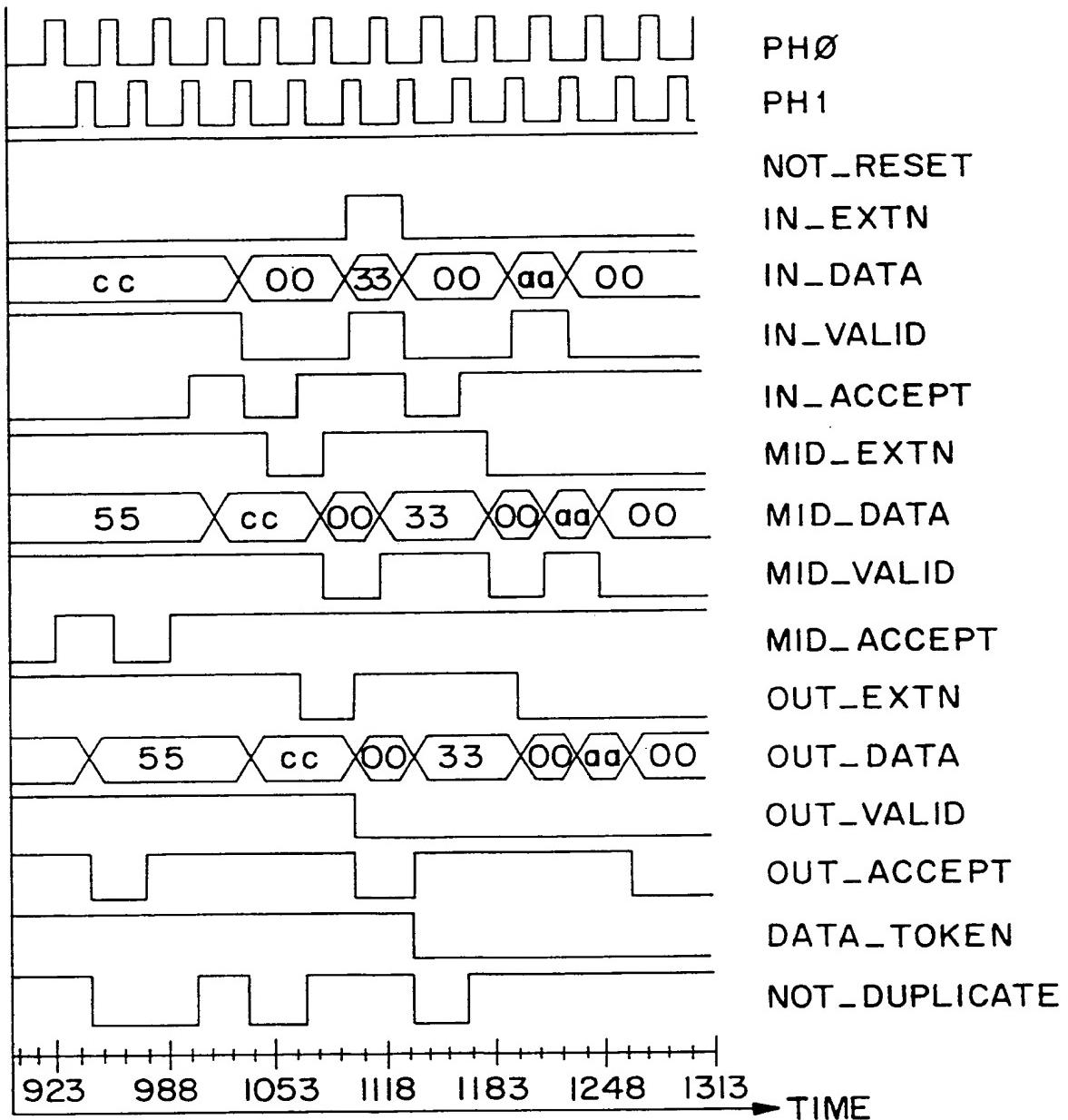


FIG. 9(B)

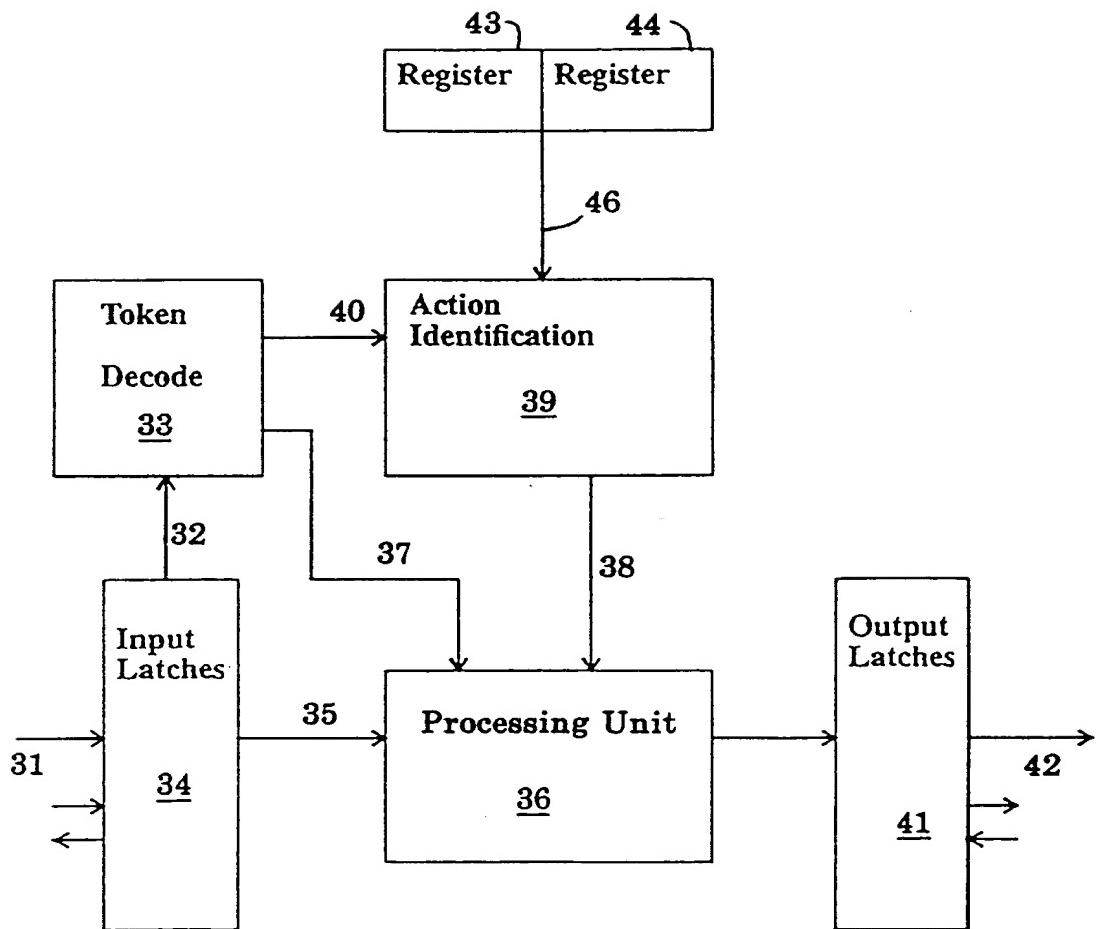


FIG. 10

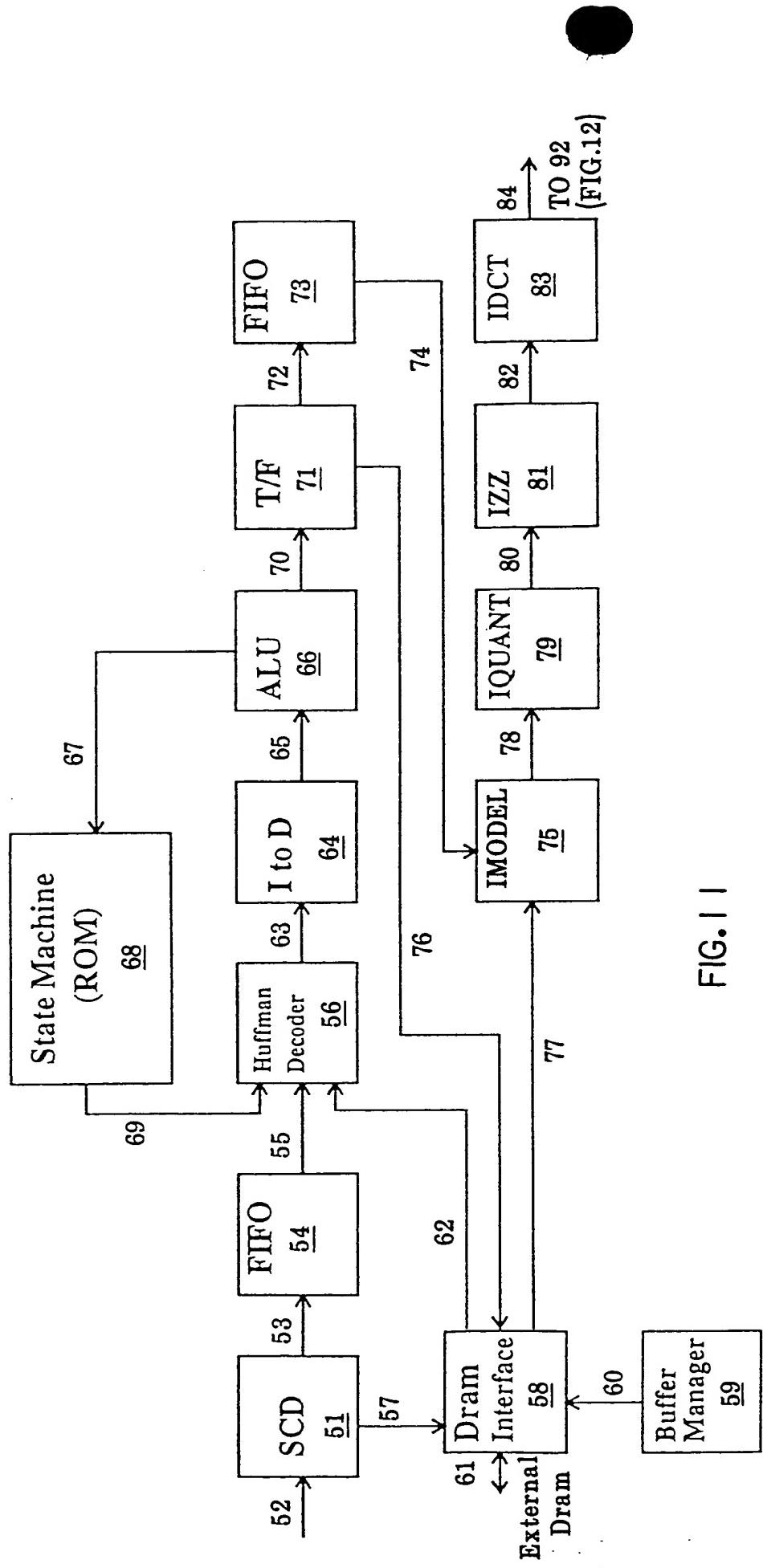


FIG. 11

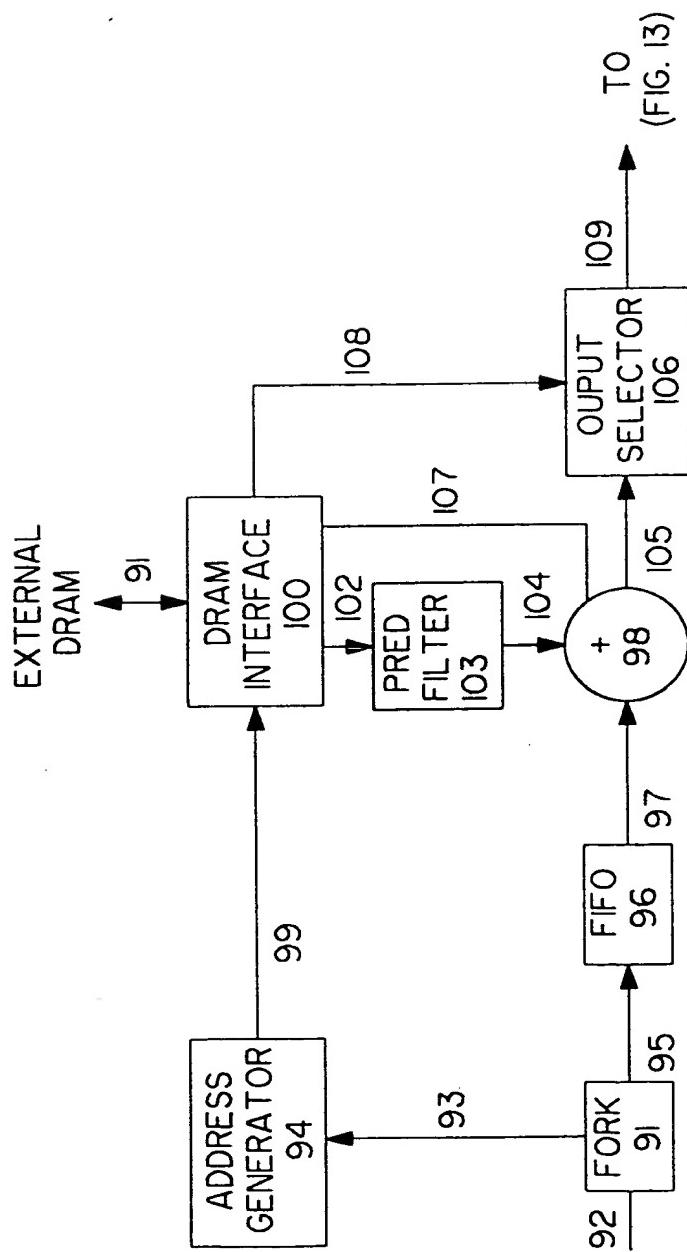


FIG. 12

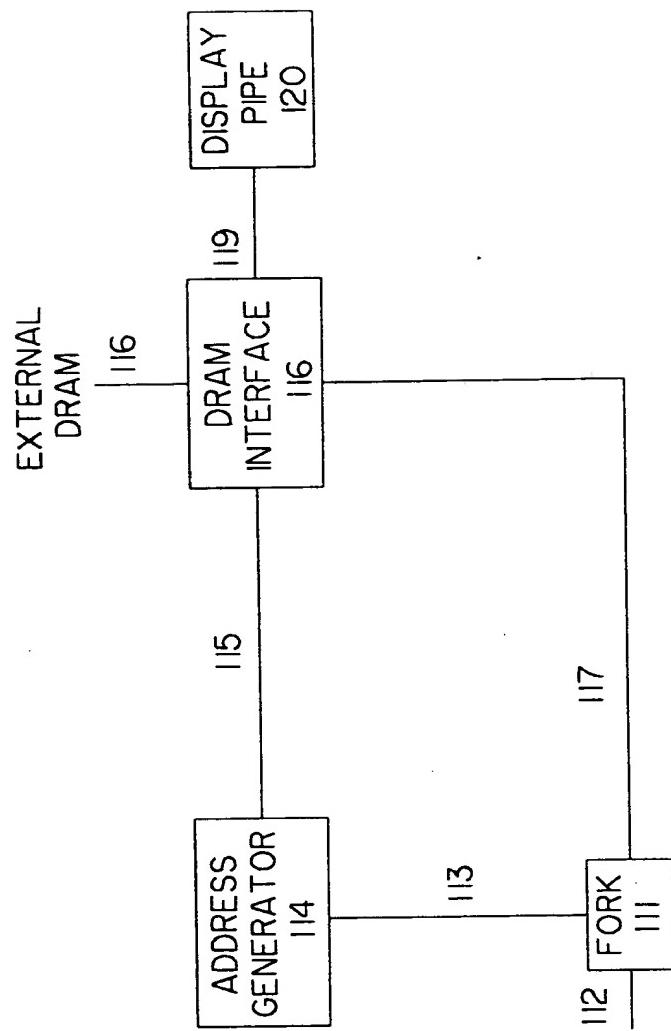


FIG. 13

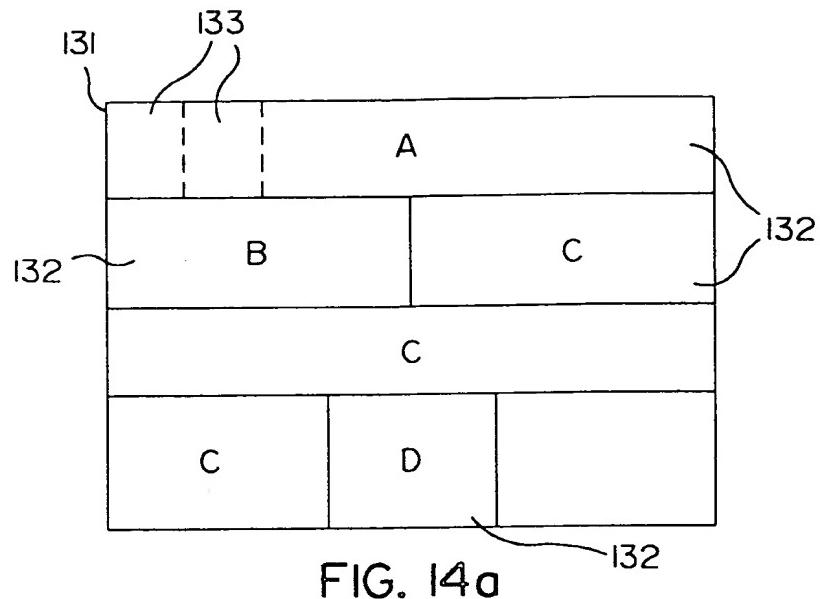


FIG. 14a

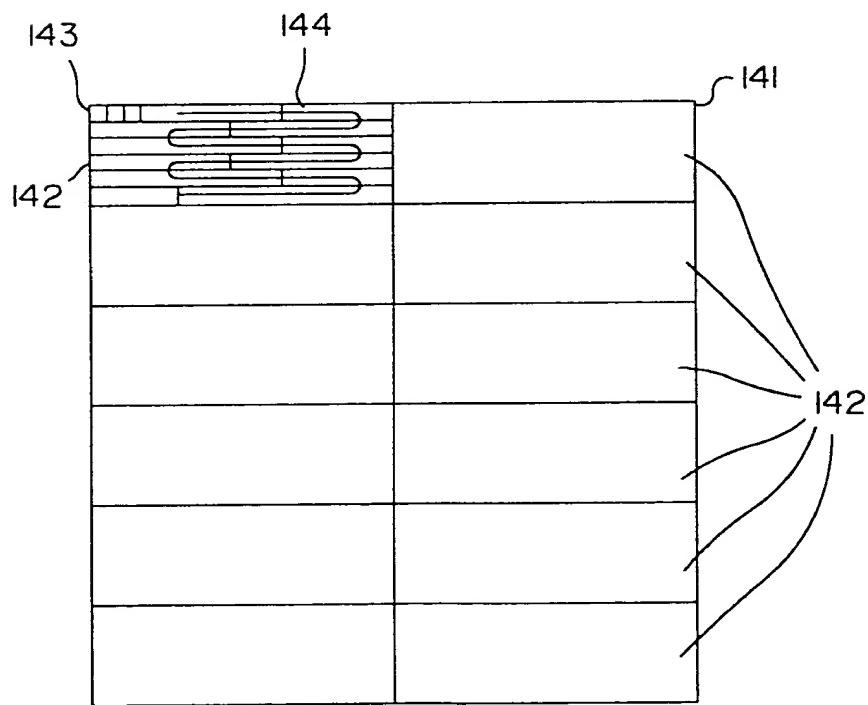


FIG. 14b

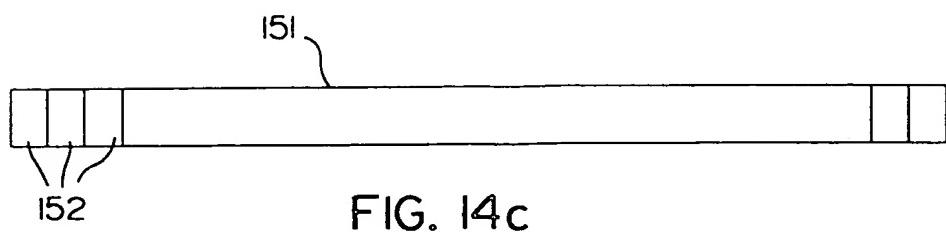


FIG. 14c

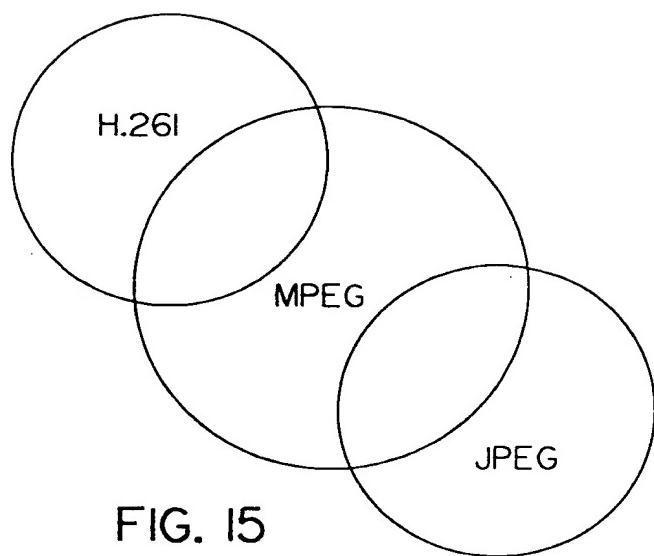


FIG. 15

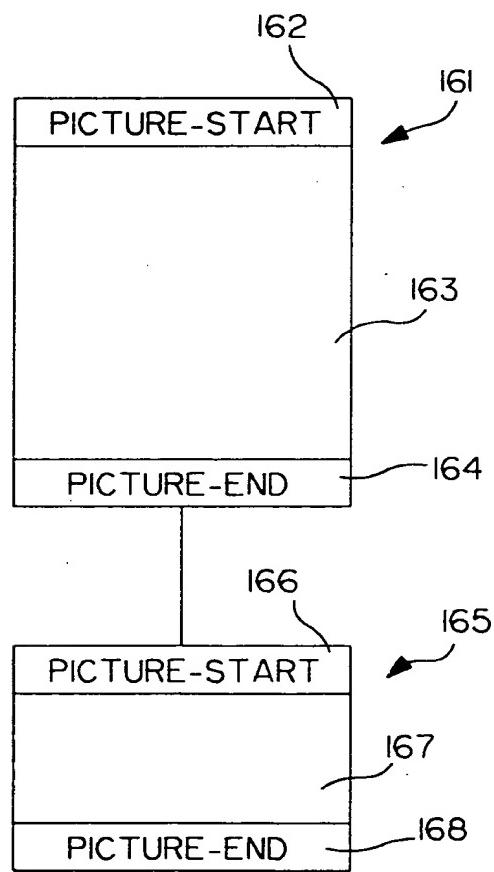


FIG. 16

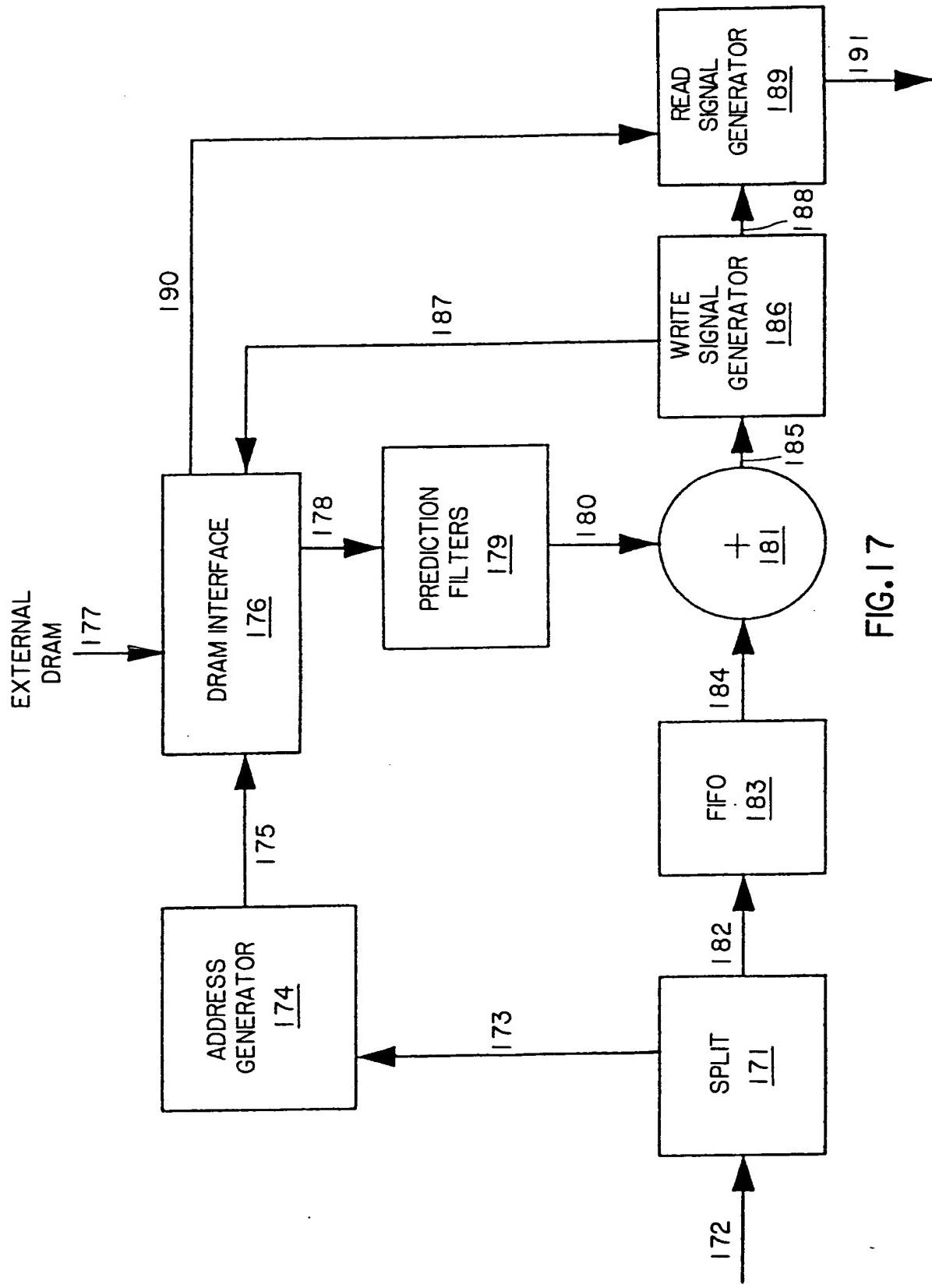


FIG. 17

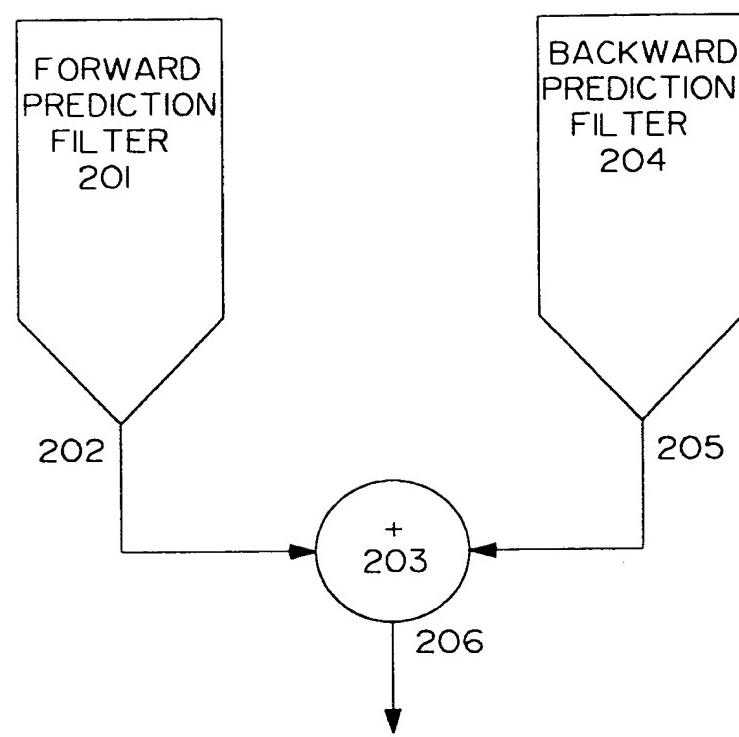
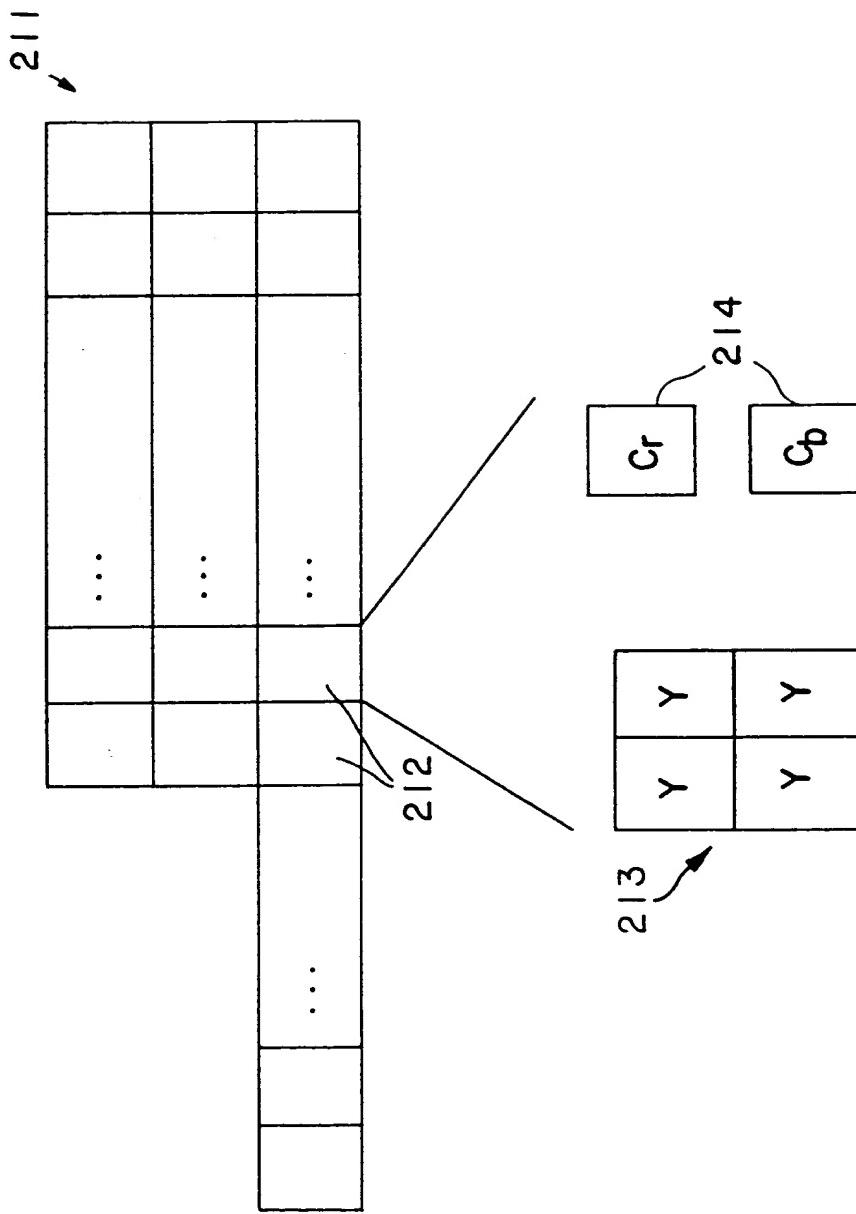


FIG. 18

FIG. I 9



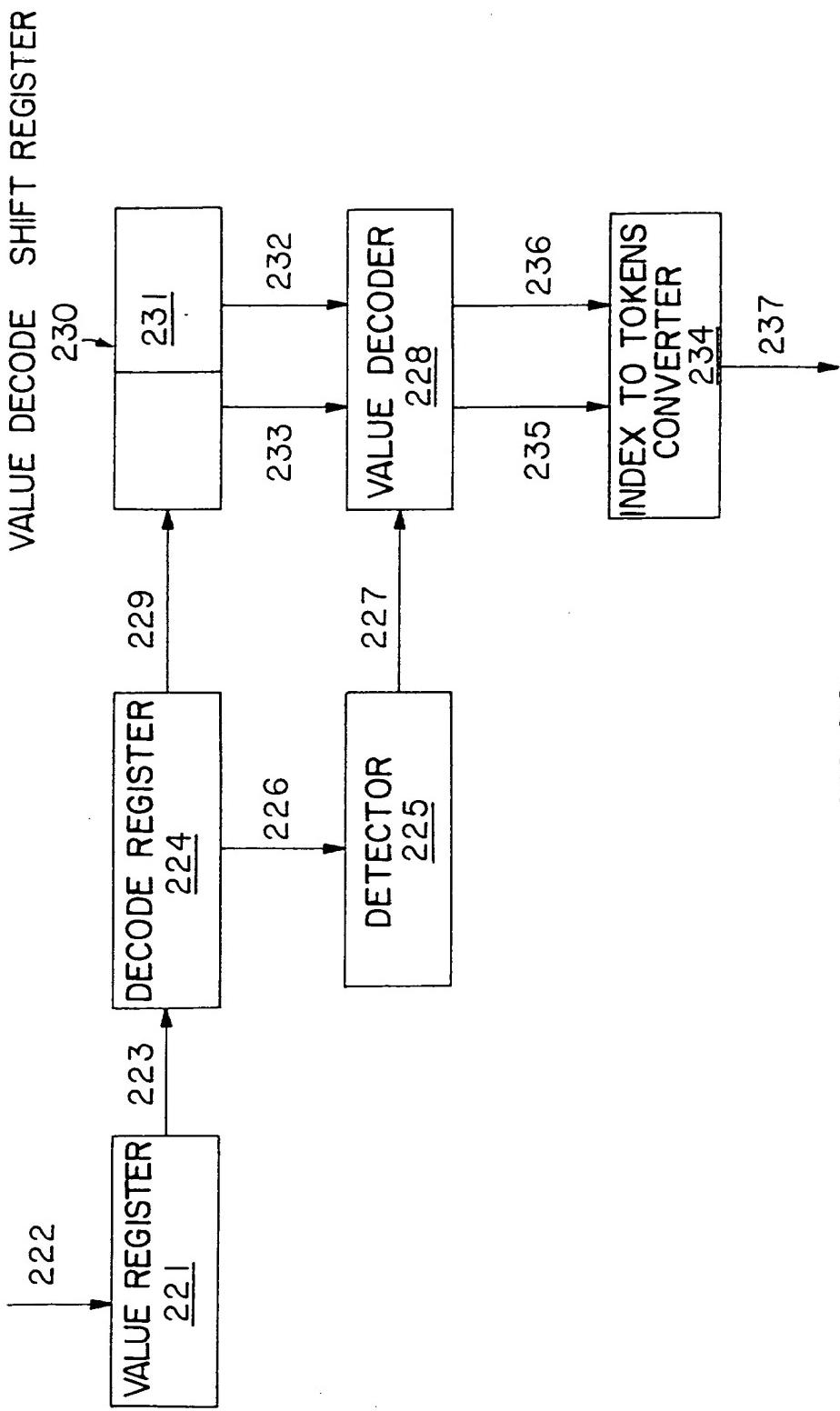


FIG.20

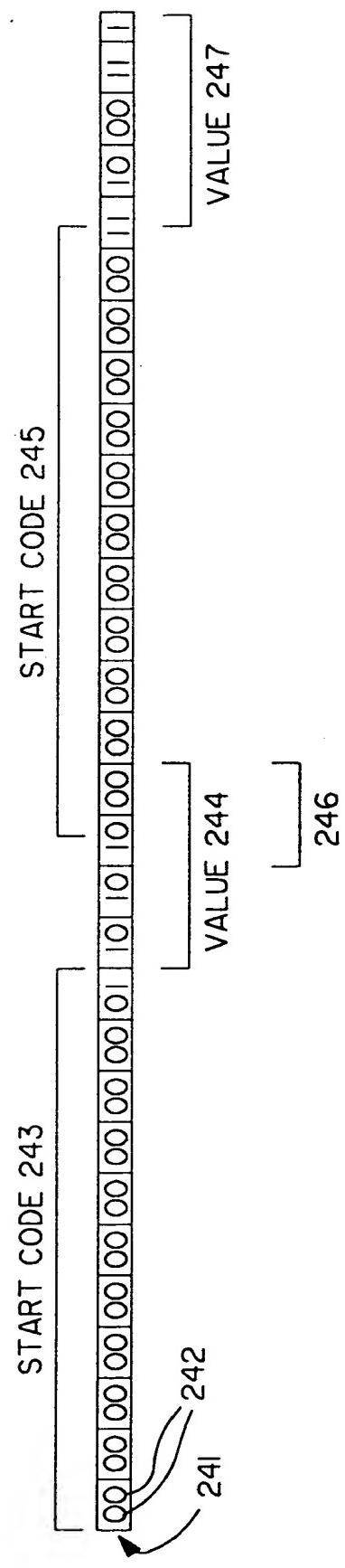


FIG. 2

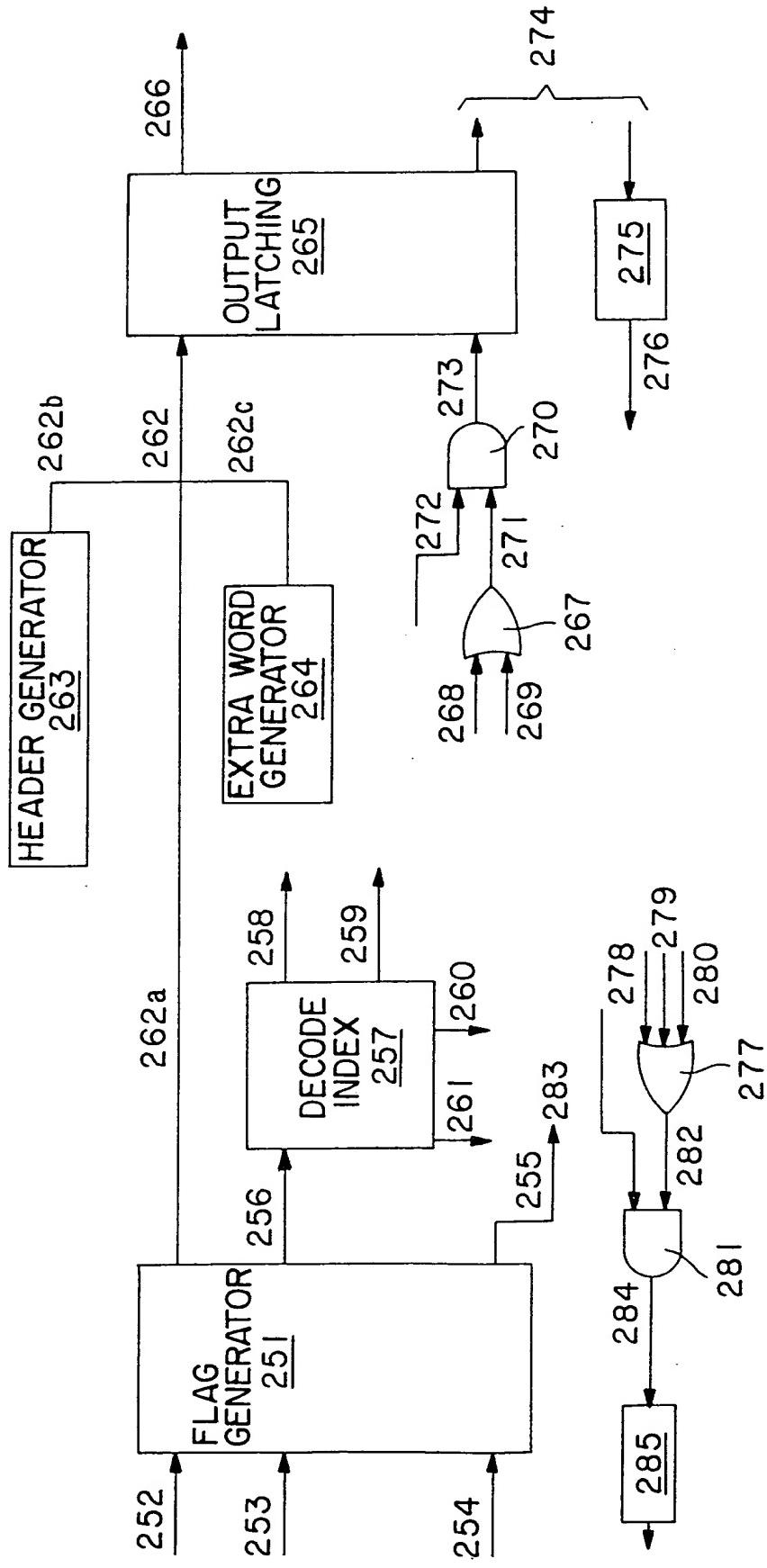


FIG.22

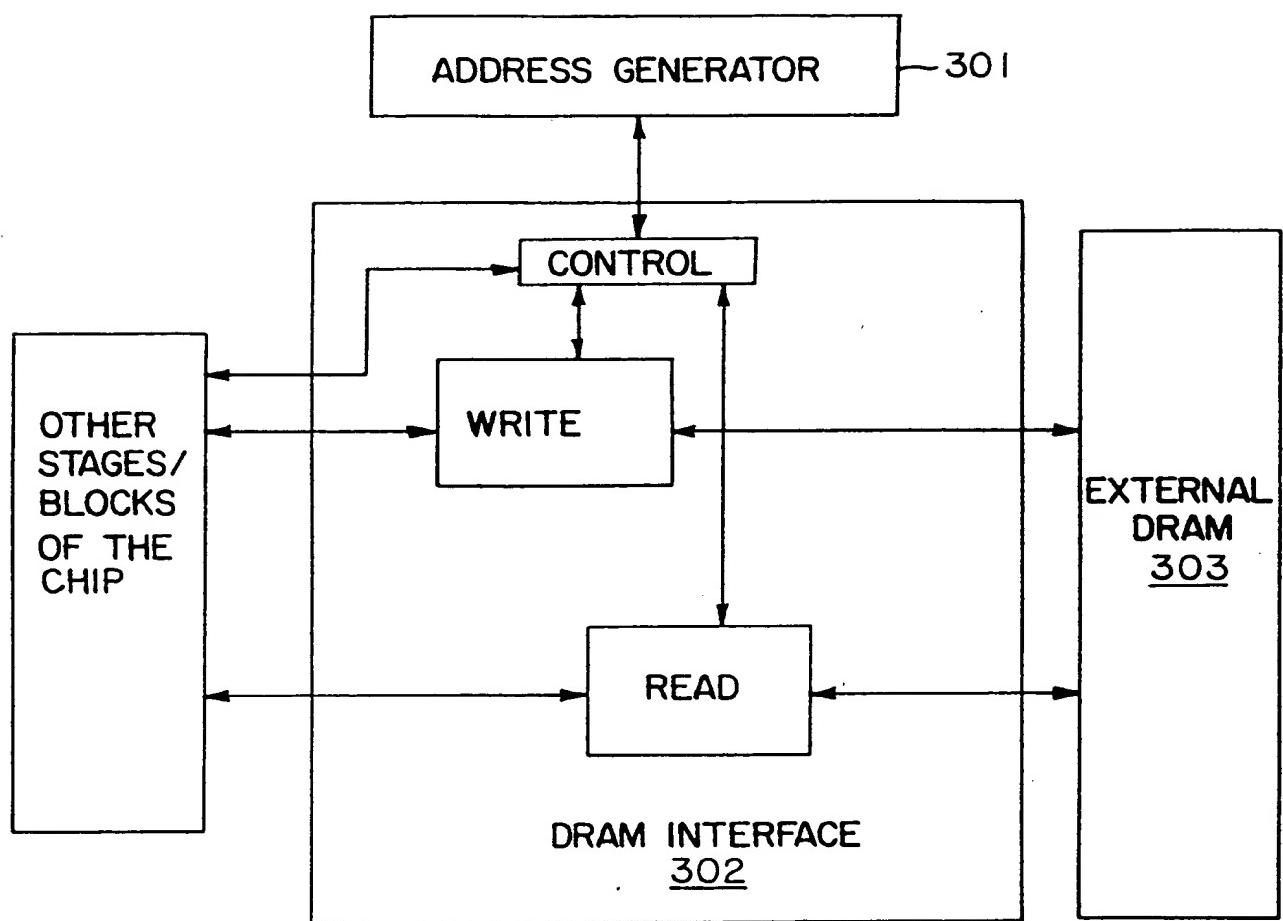


FIG.23

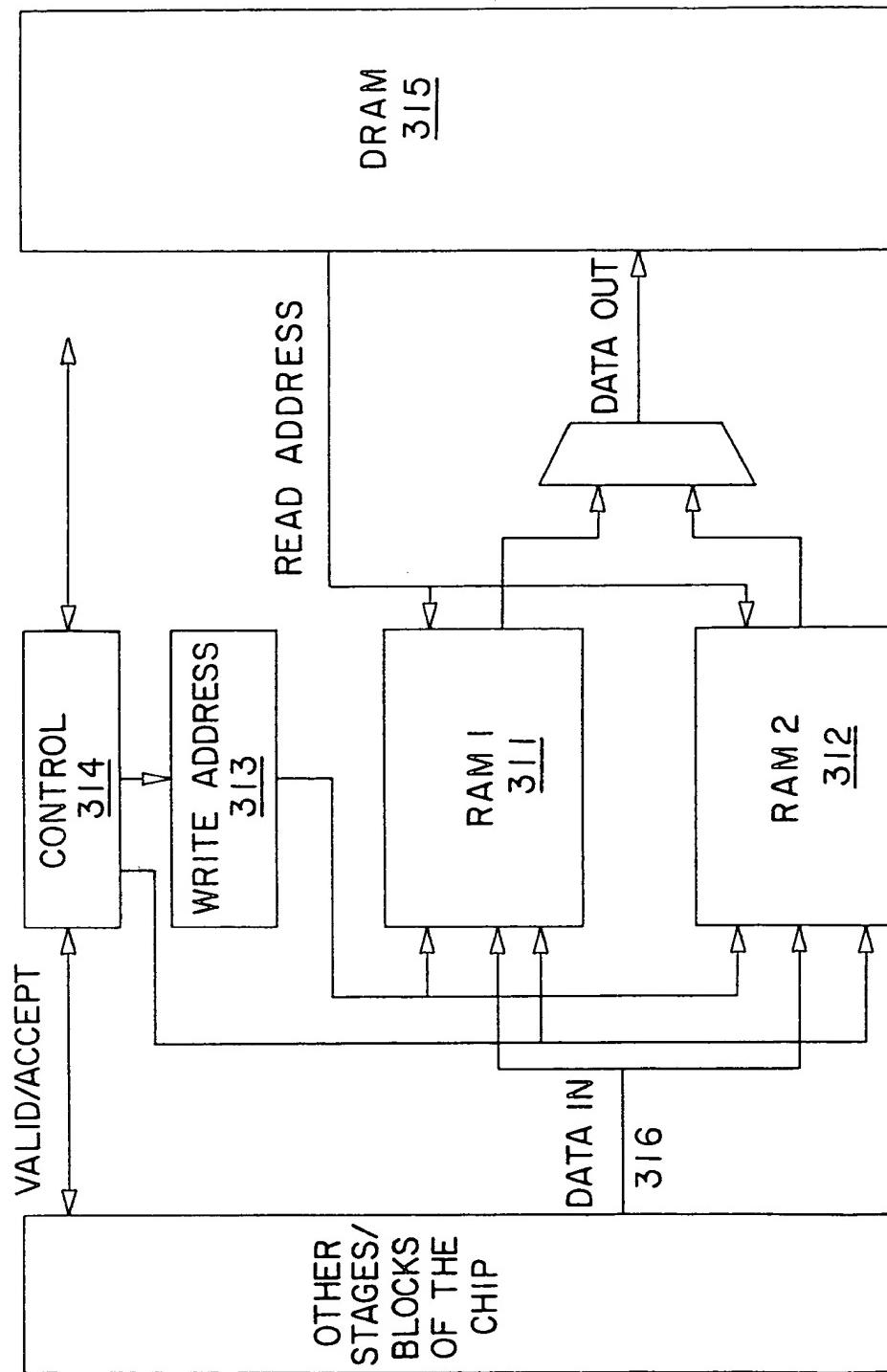
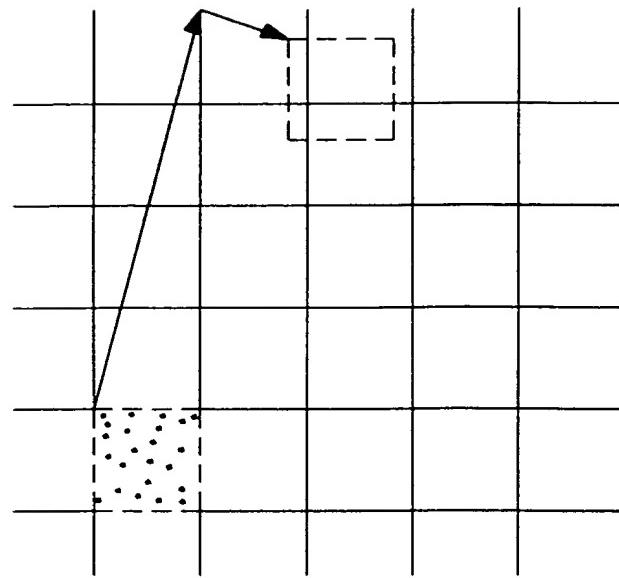
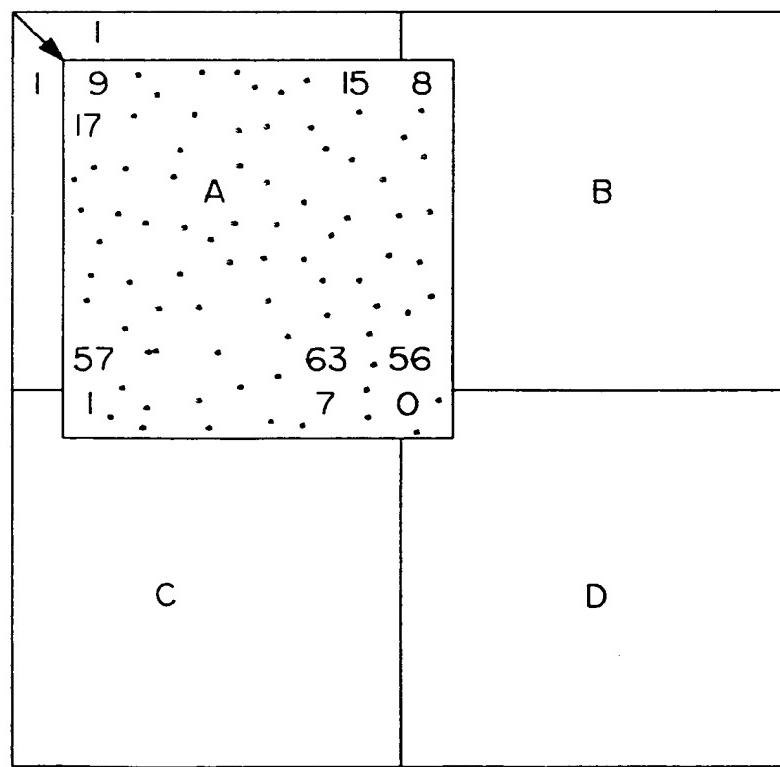


FIG.24



**FIG. 25**



**FIG. 26**

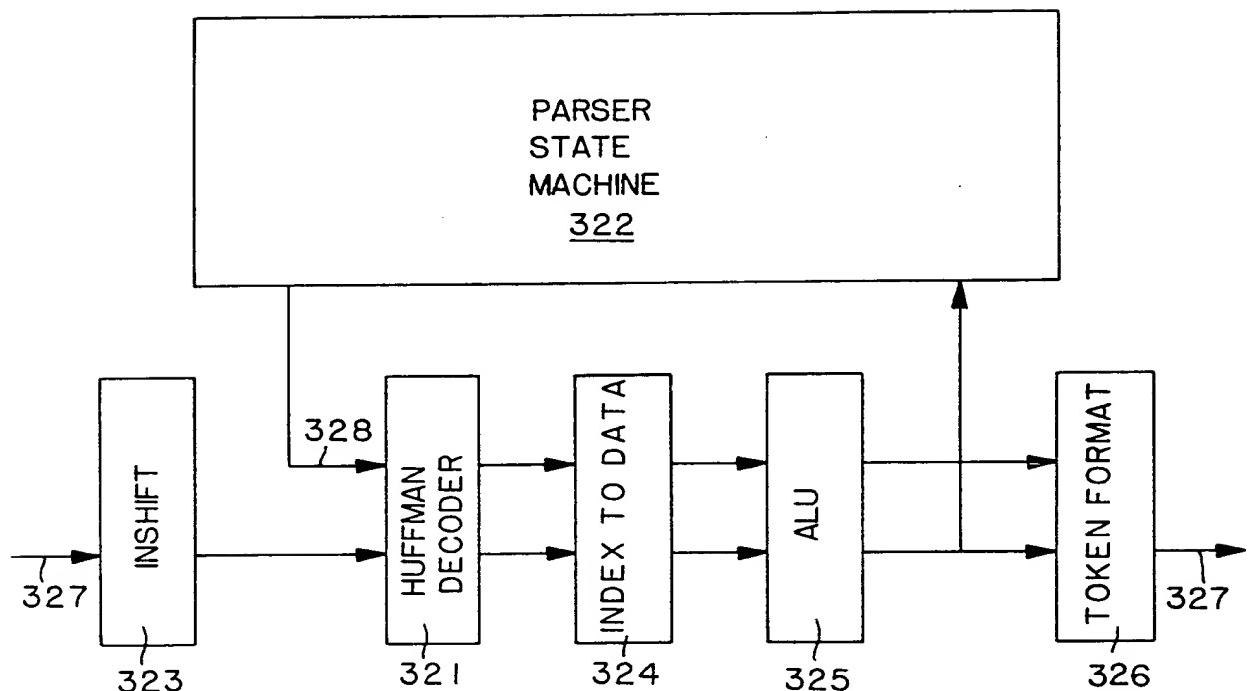


FIG.27

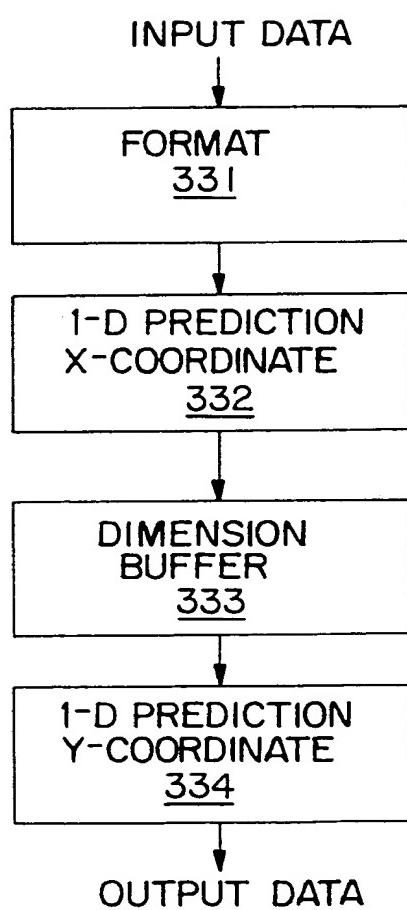


FIG.28

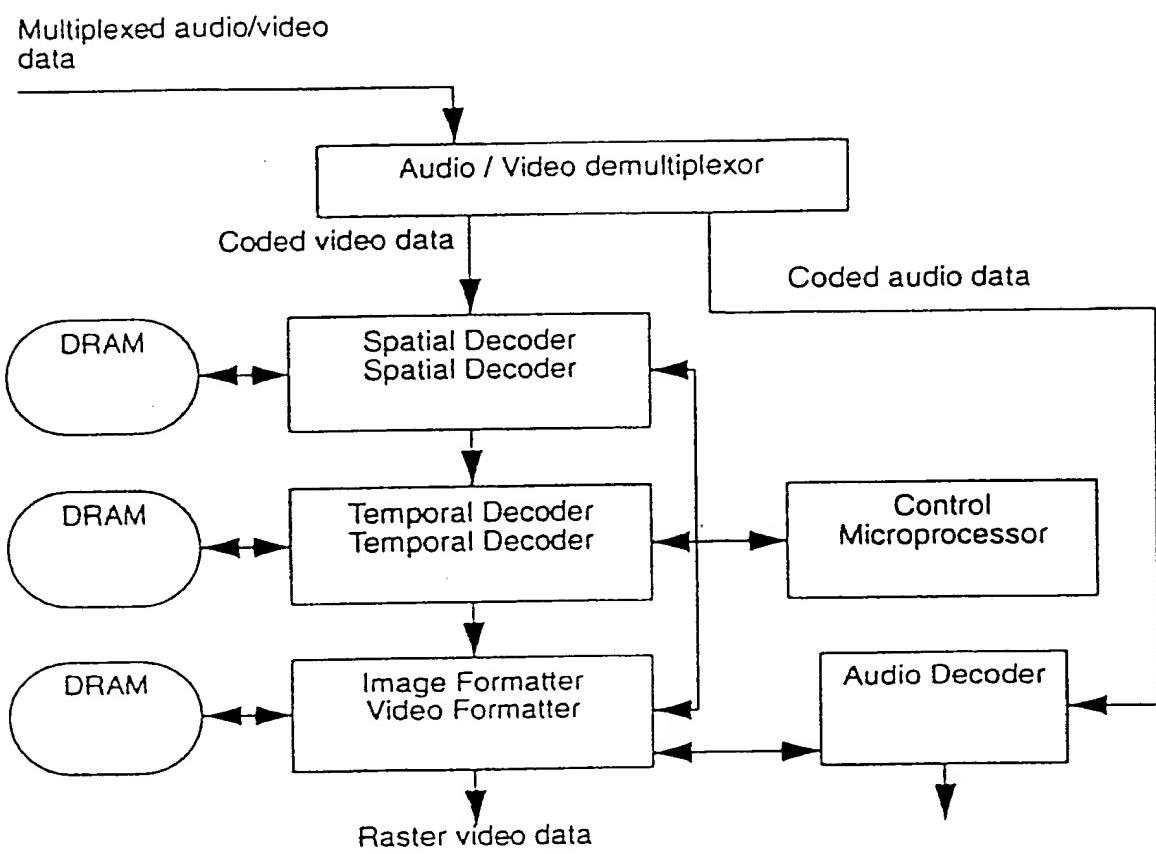
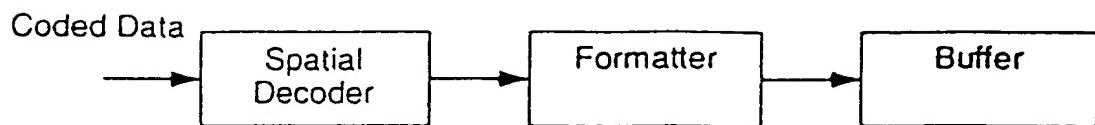
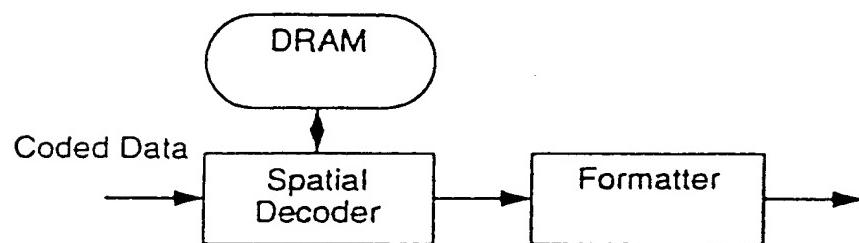


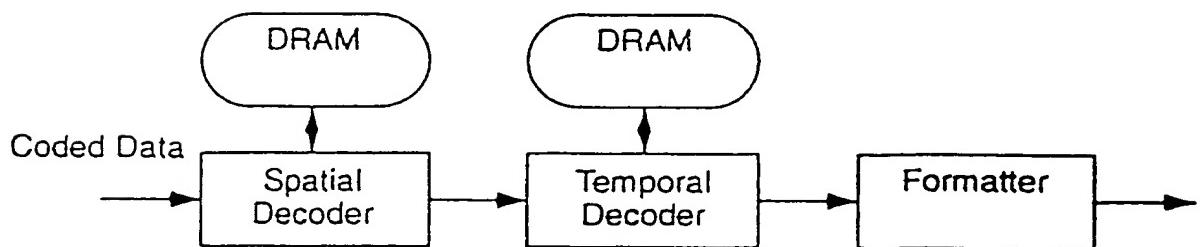
FIG.29



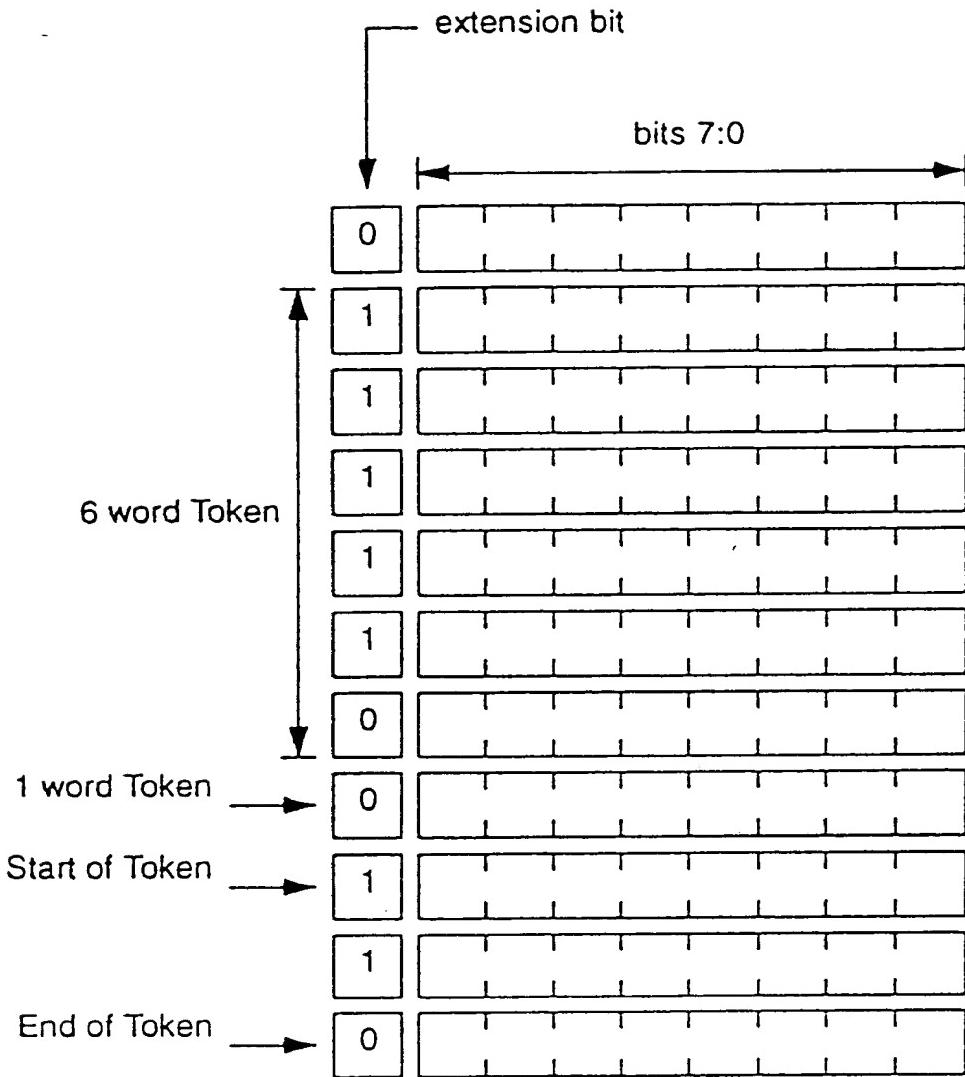
**FIG.30**



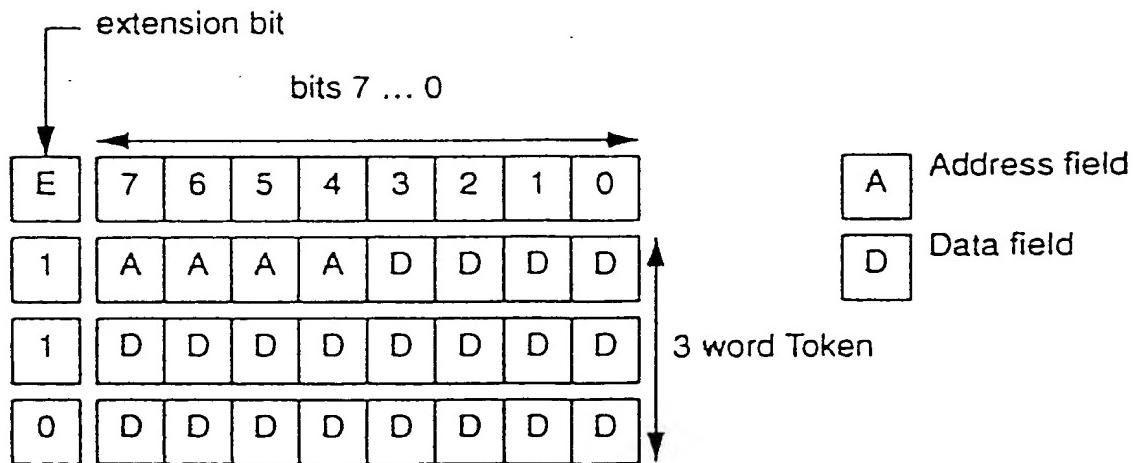
**FIG.31**



**FIG.32**



**FIG.33**



**FIG.34**

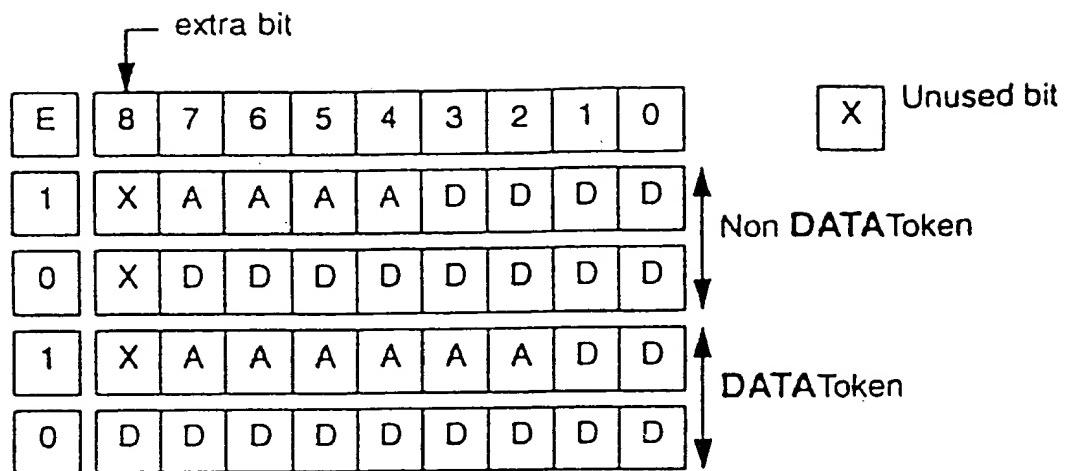
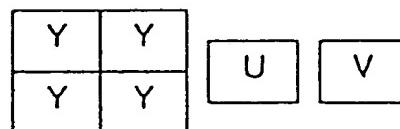


FIG.35



MPEG 4:2:0  
macroblock

FIG.36A



JPEG 2:1:1  
macroblock

FIG.36B

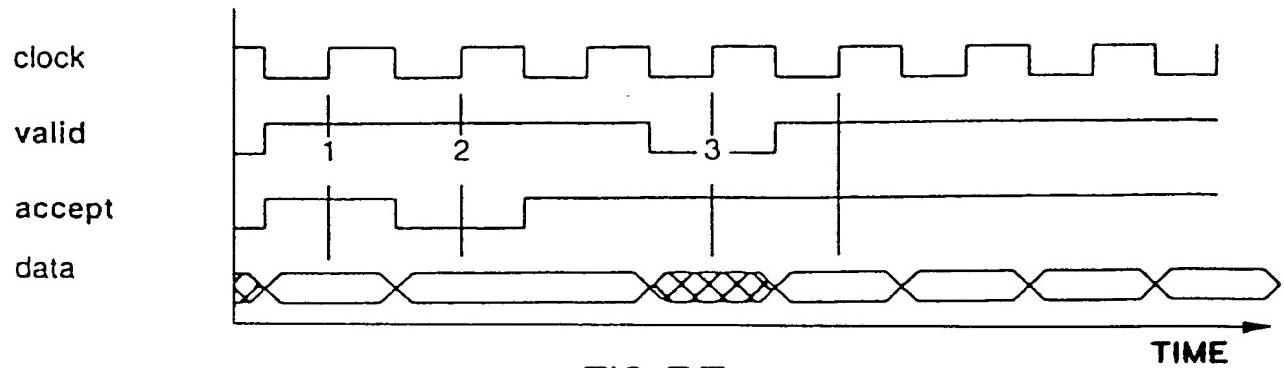


FIG.37

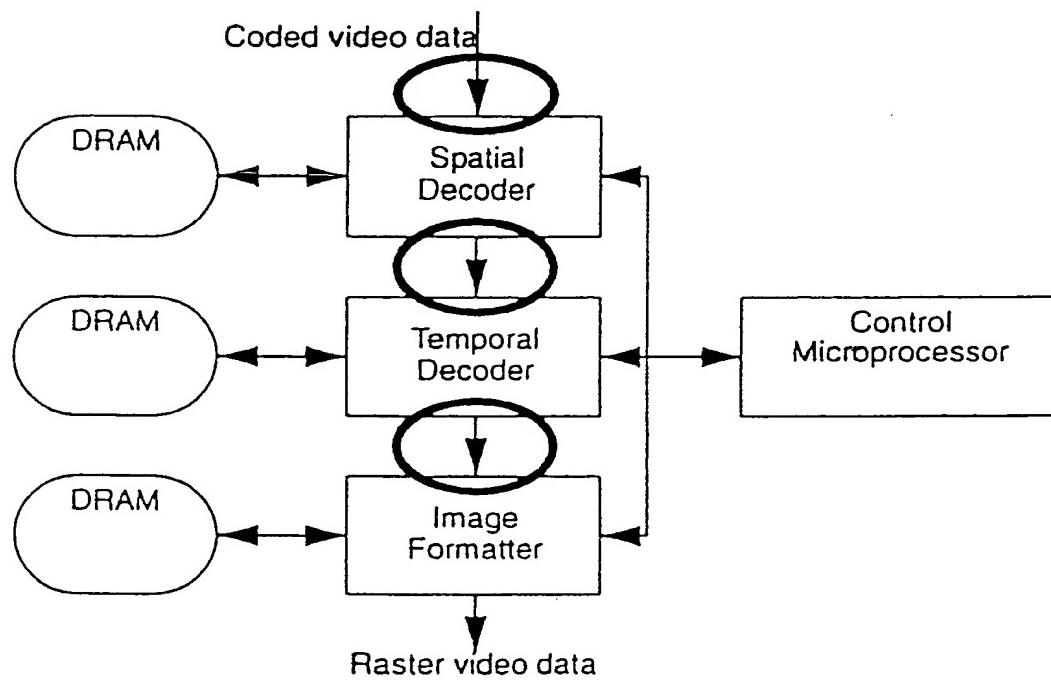
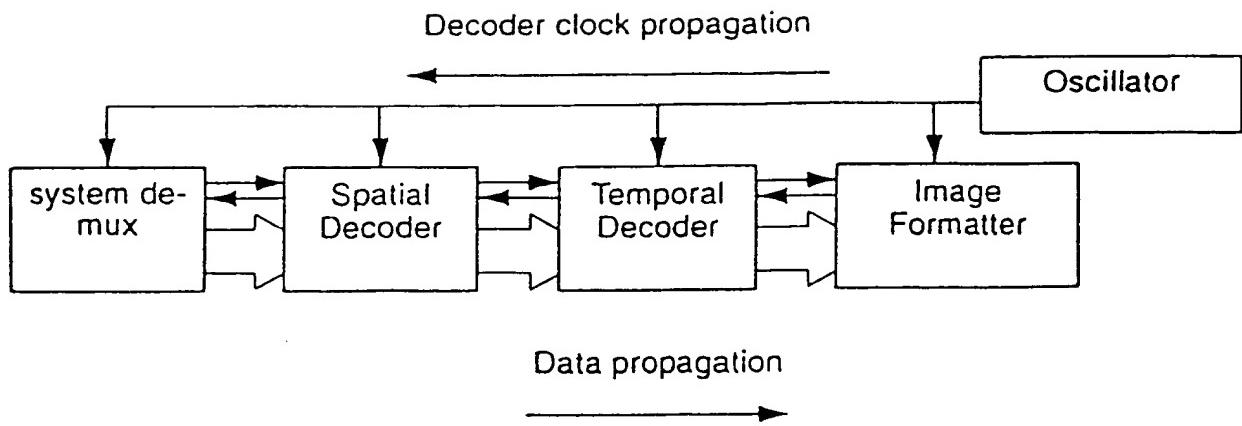
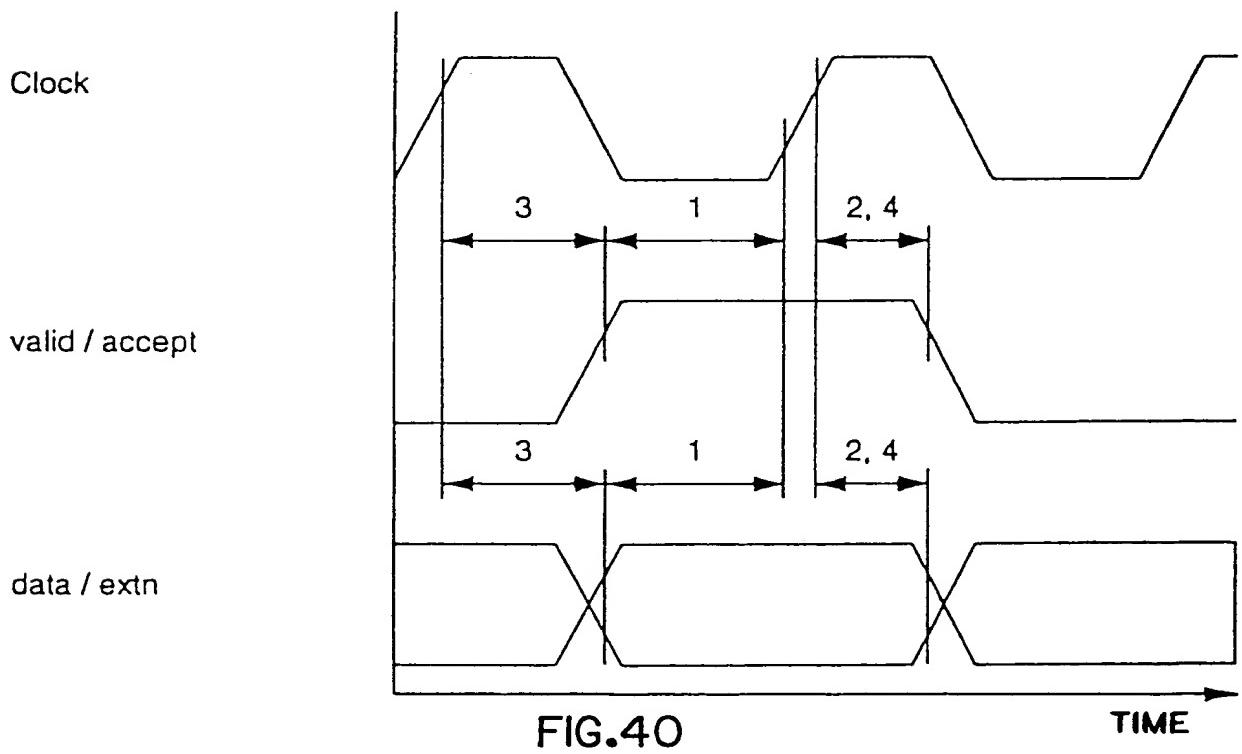


FIG.38

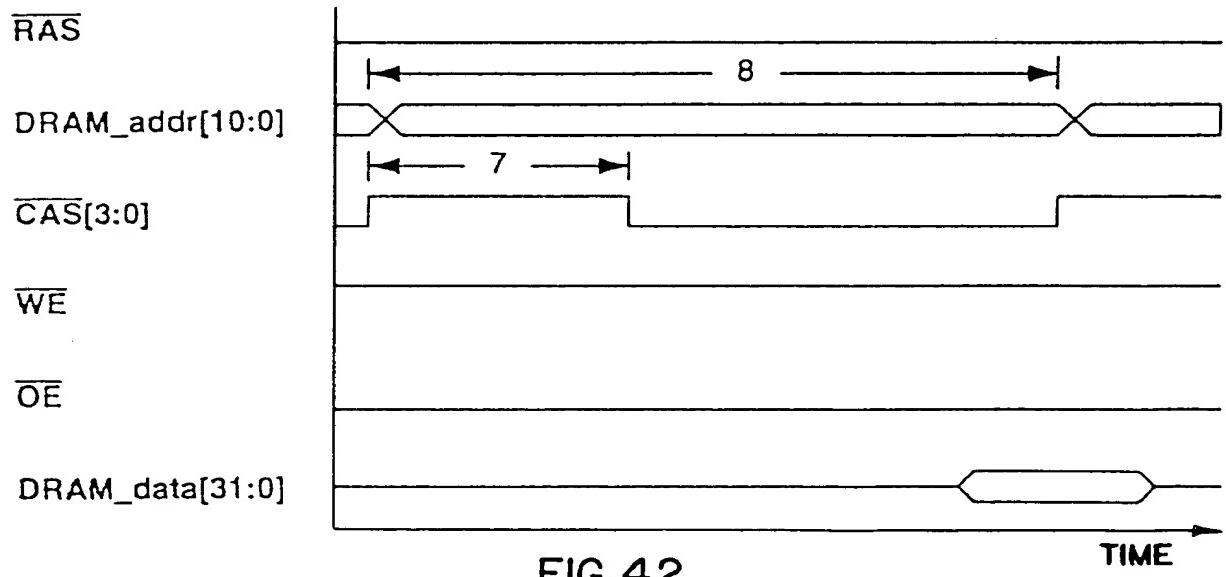


**FIG.39**





**FIG.41**



**FIG.42**

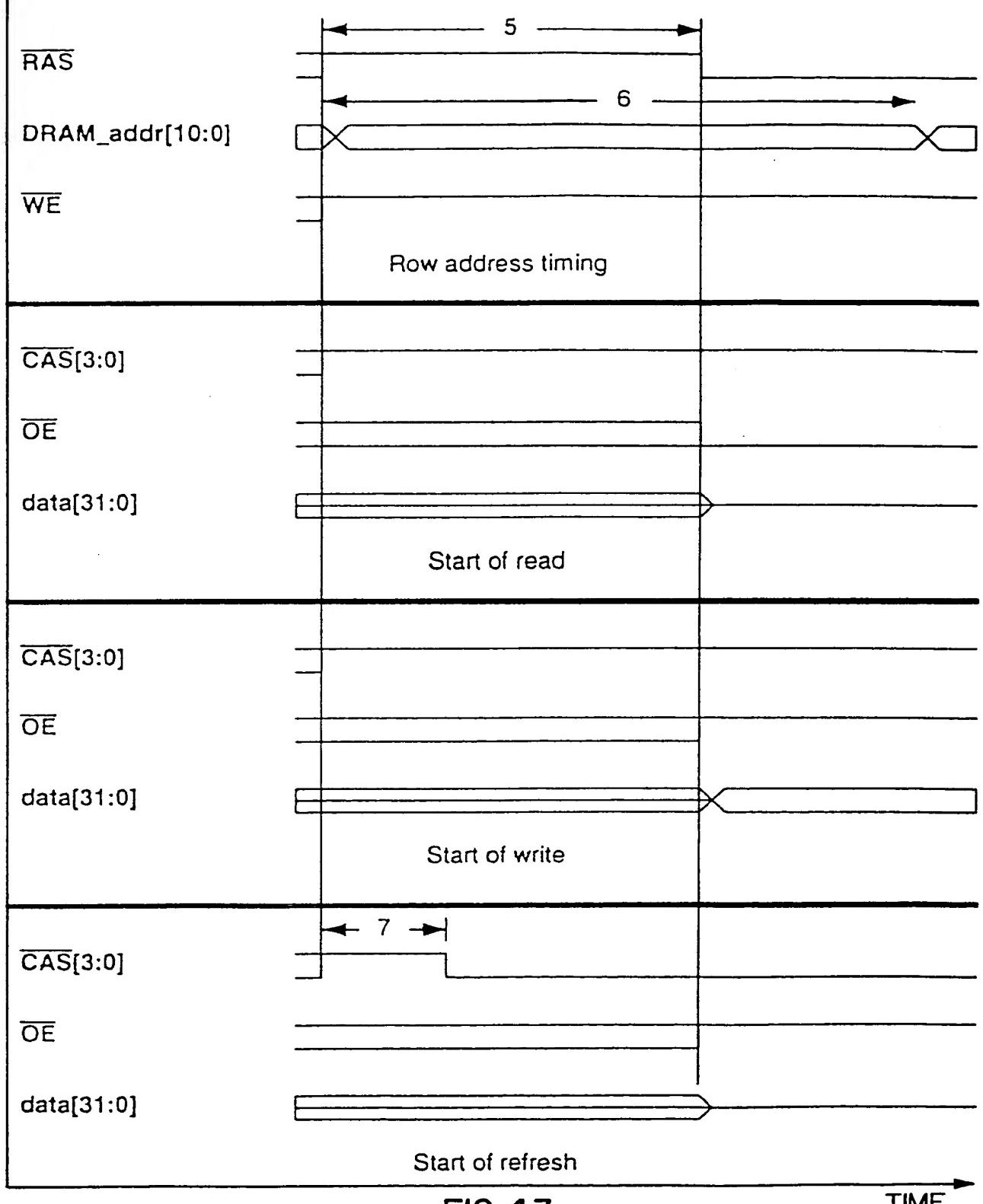


FIG.43

TIME

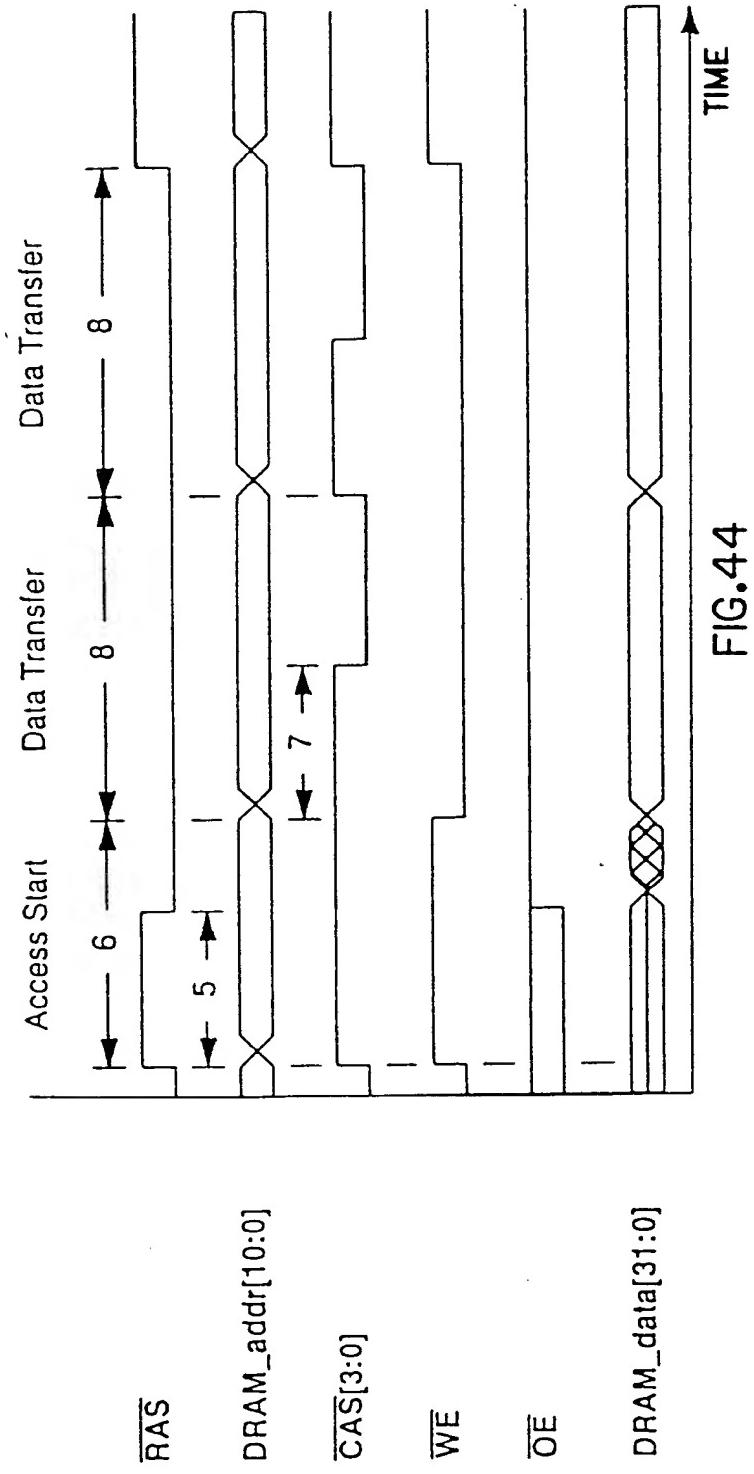


FIG.44

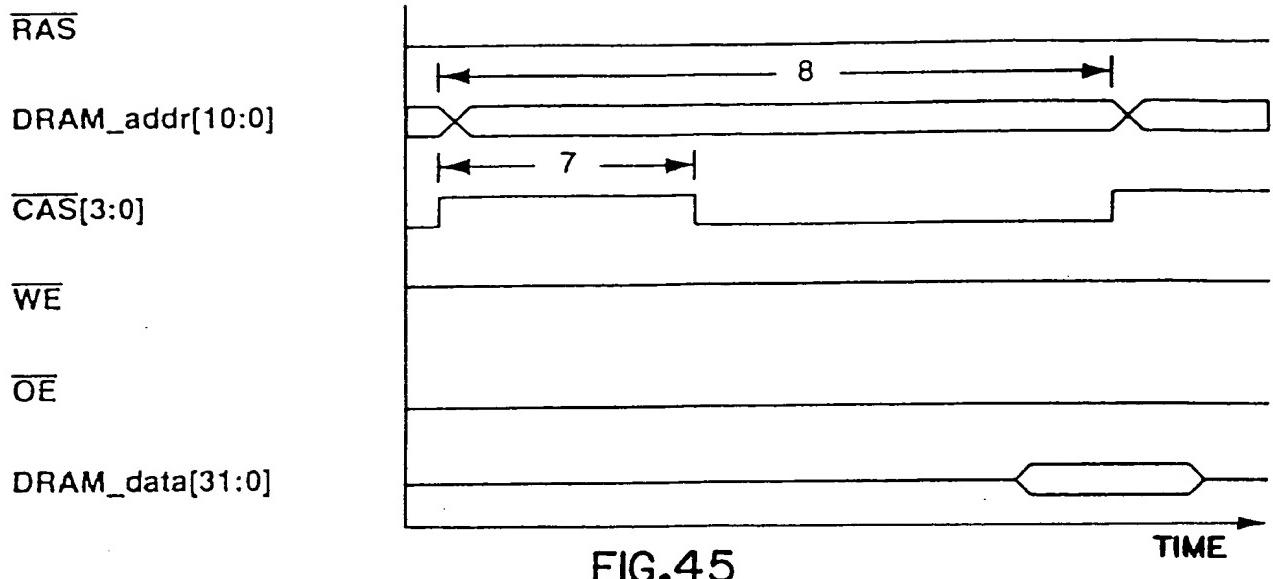


FIG.45

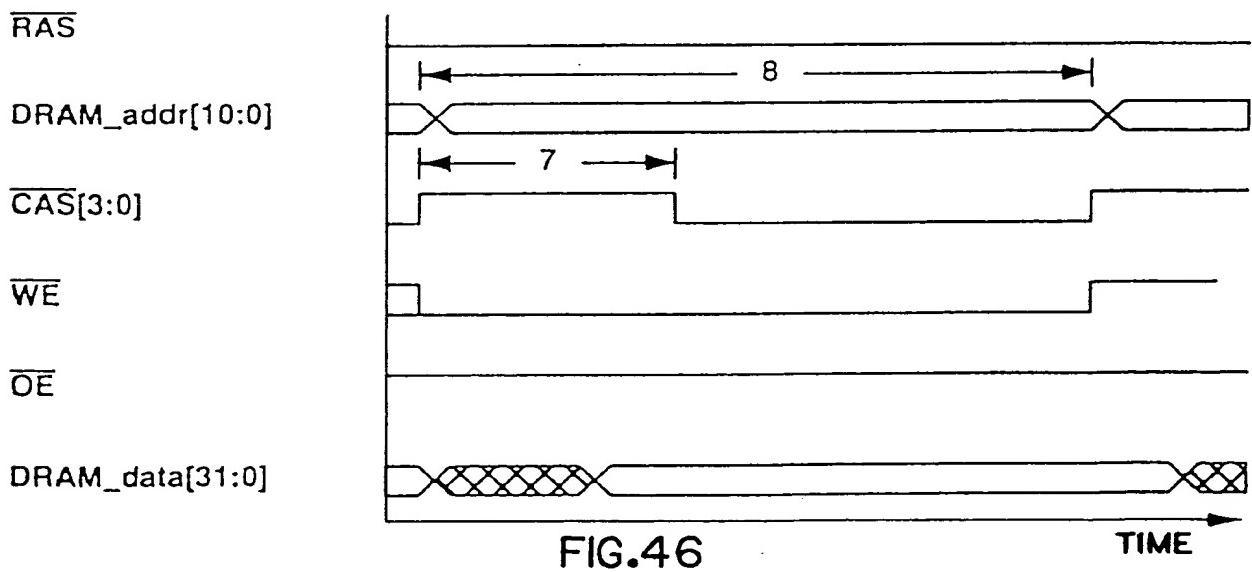


FIG.46

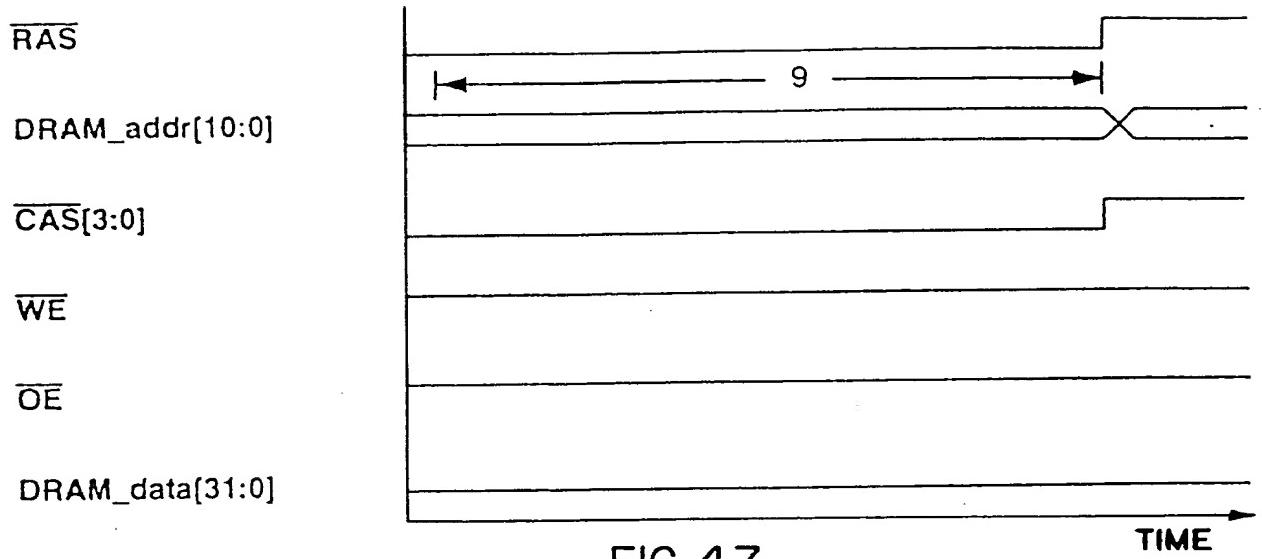


FIG.47

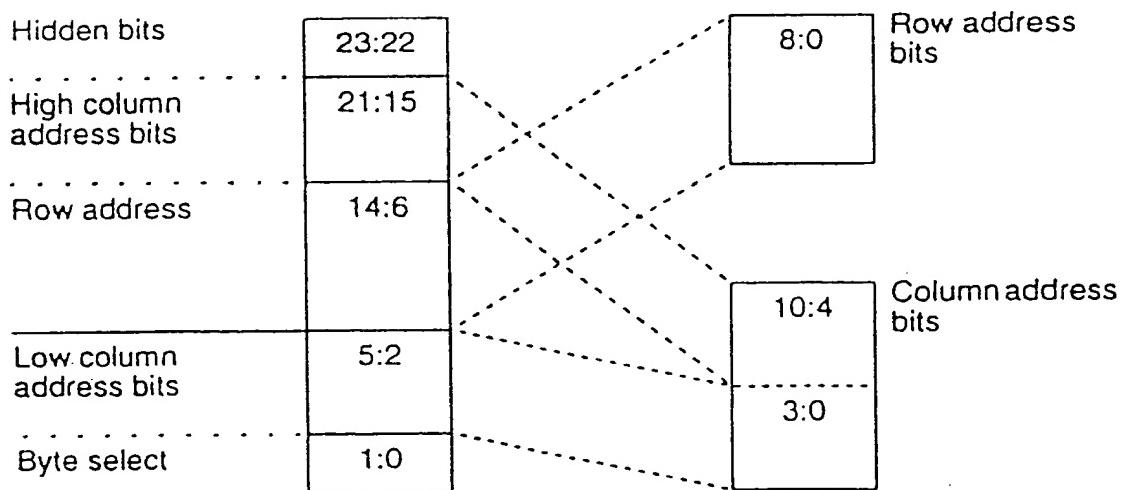


FIG.48

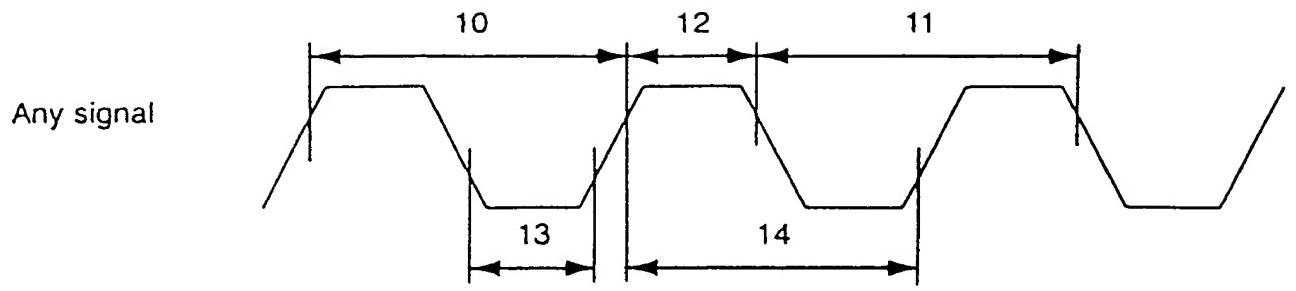


FIG.49

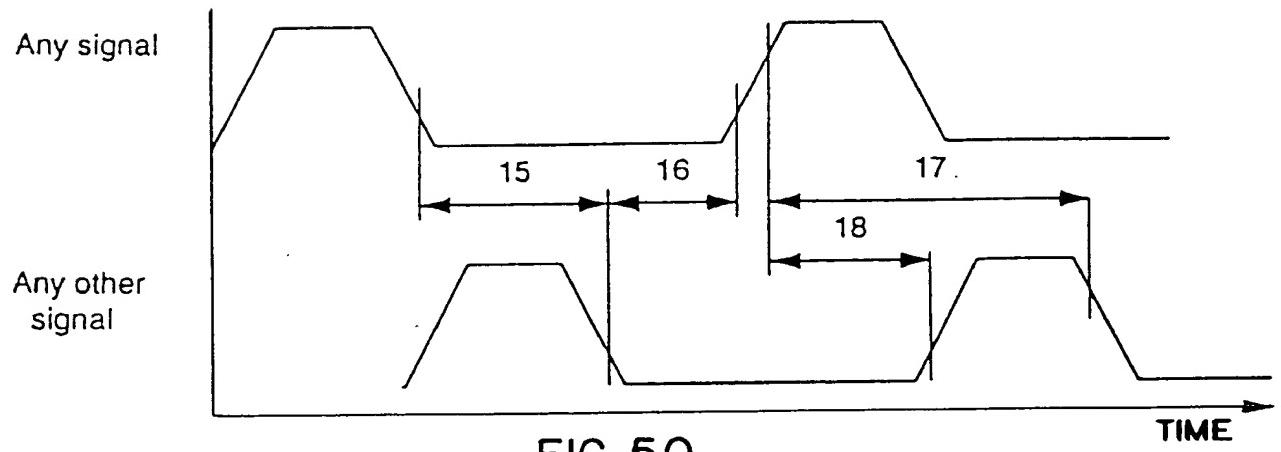


FIG.50

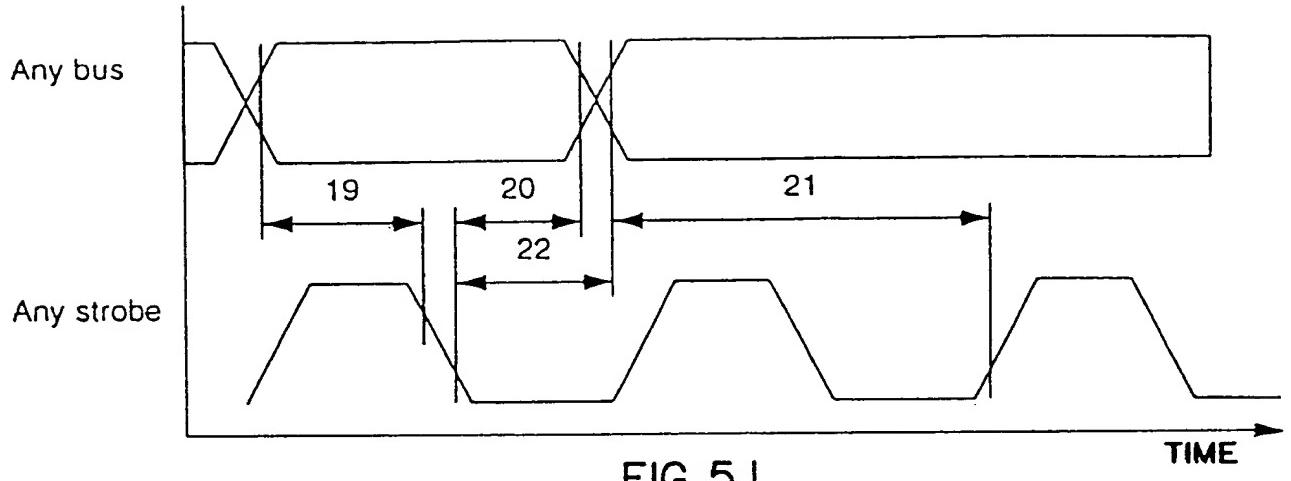


FIG.51

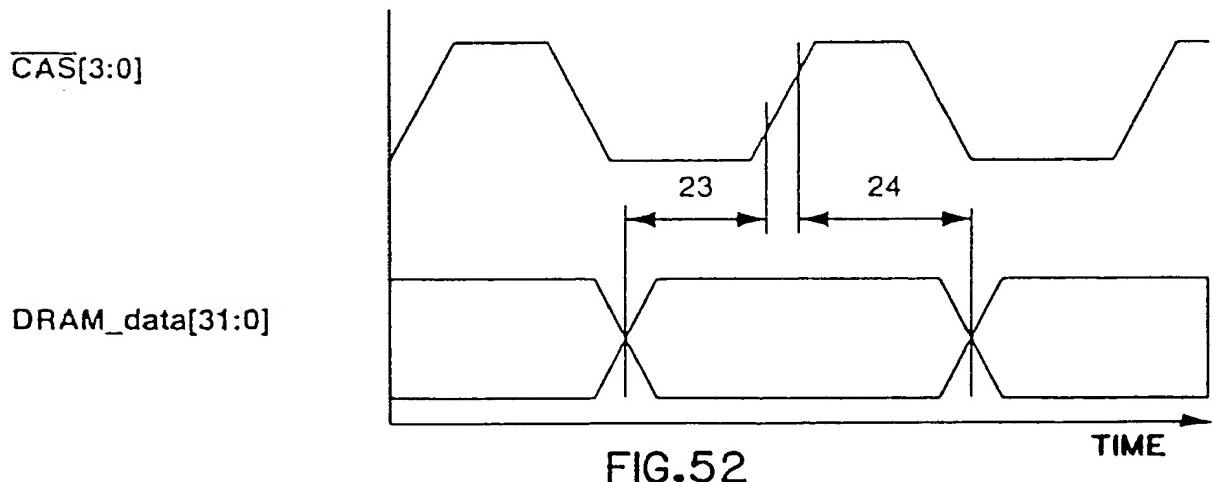
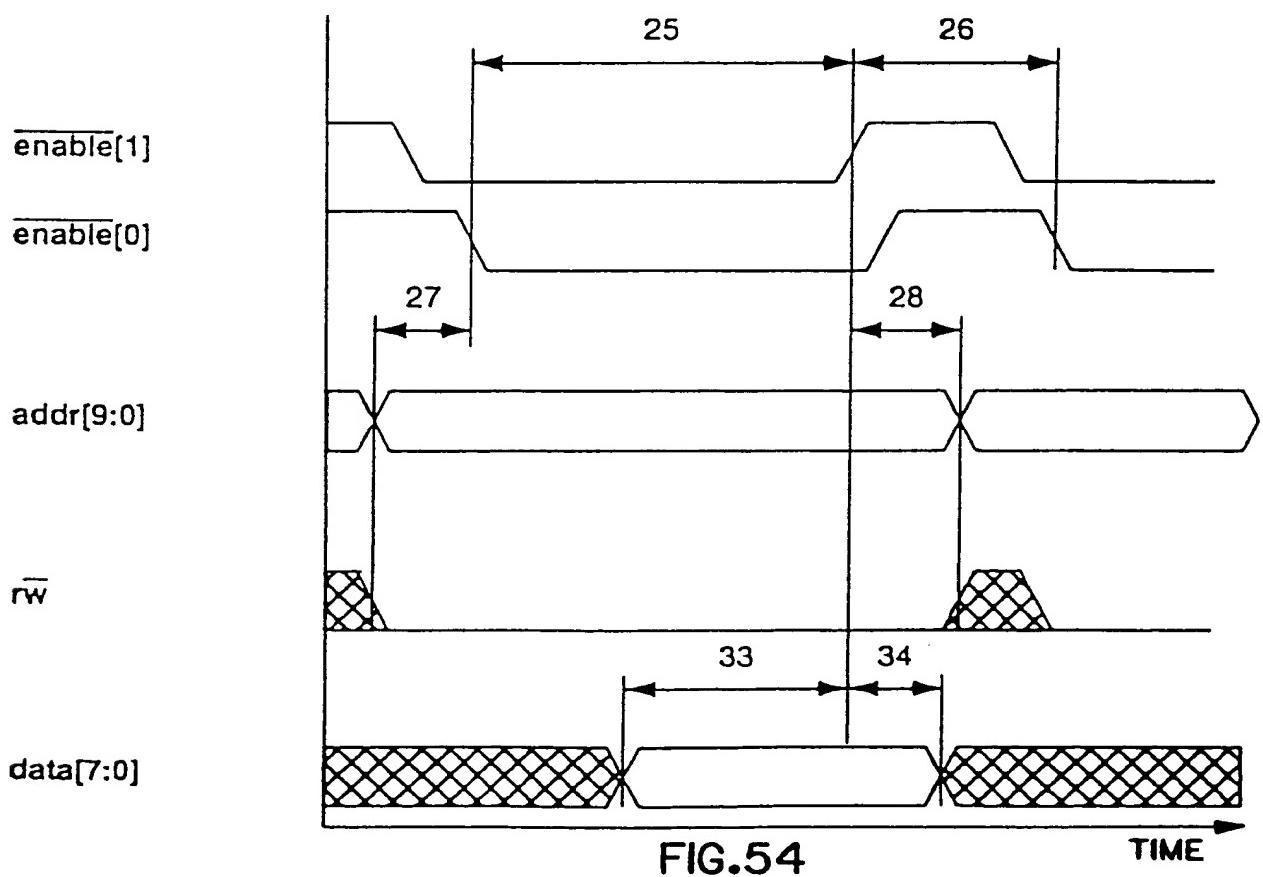
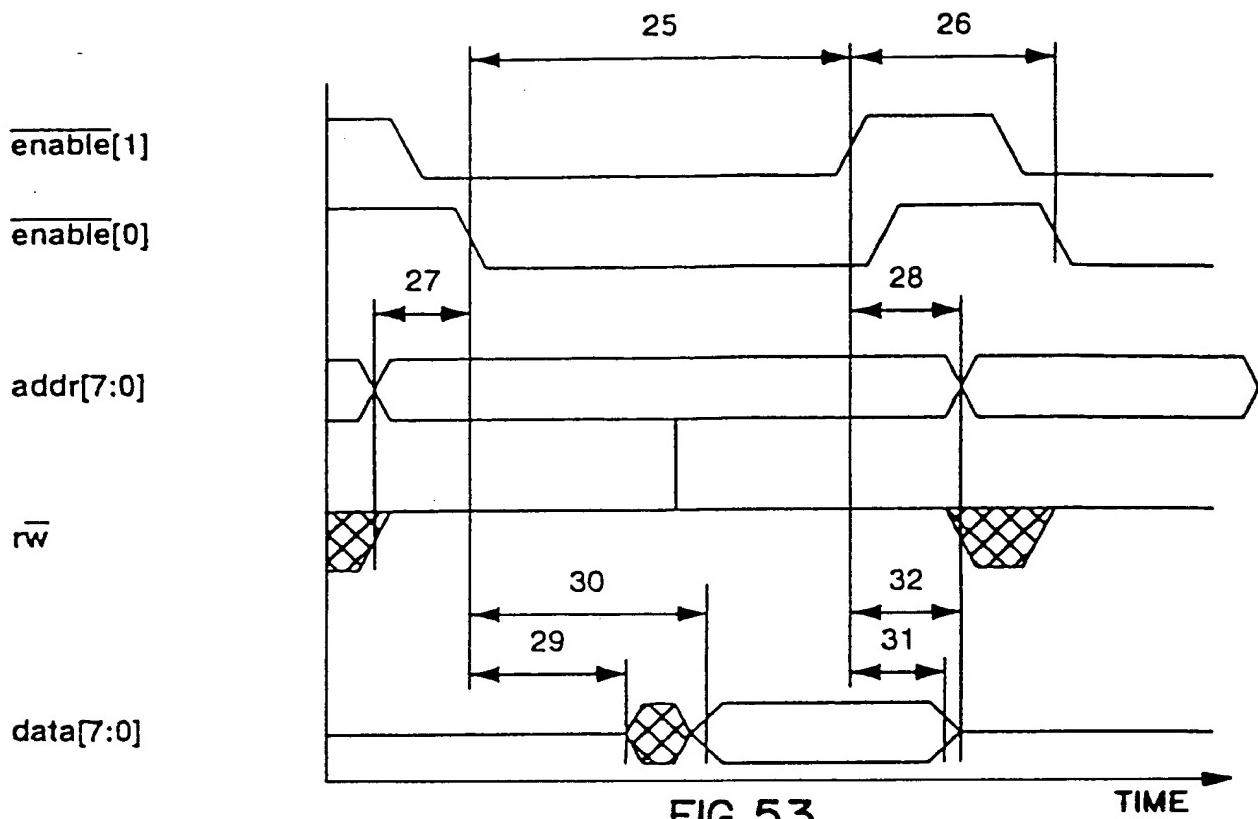


FIG.52



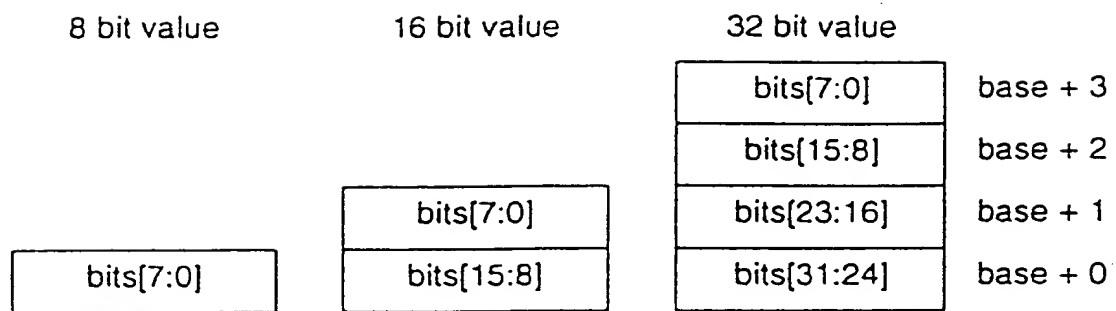


FIG.55

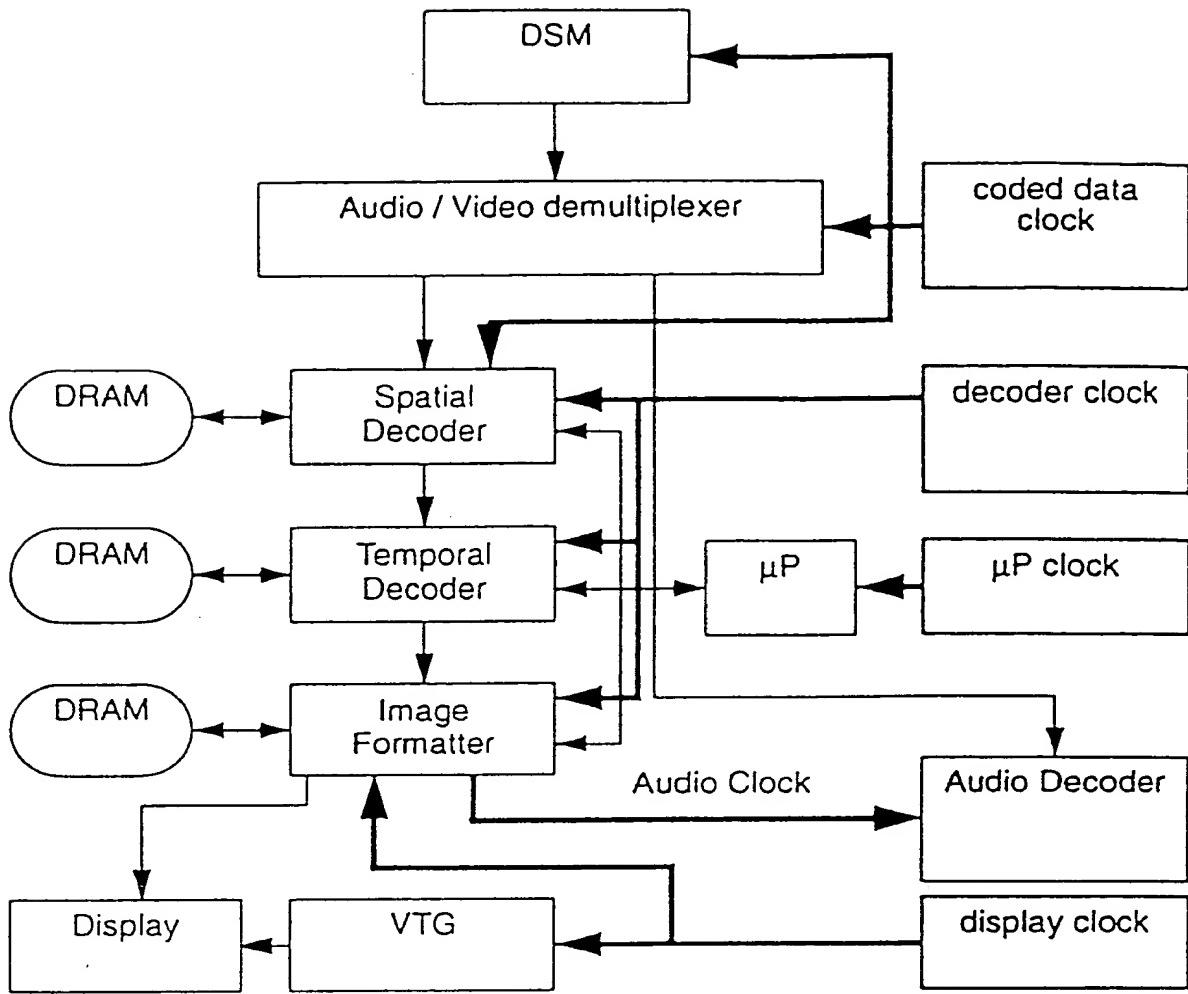


FIG.56

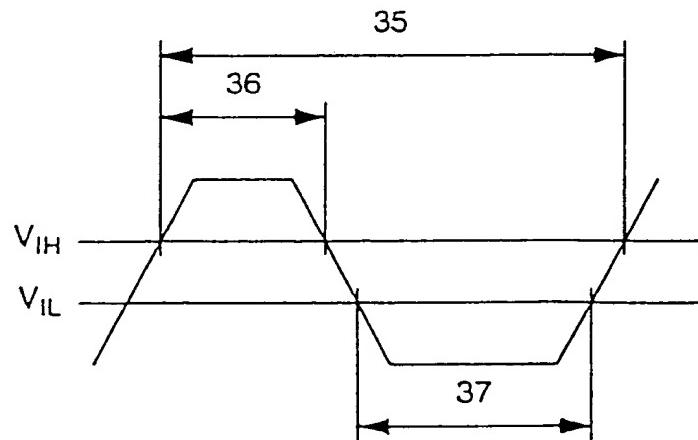
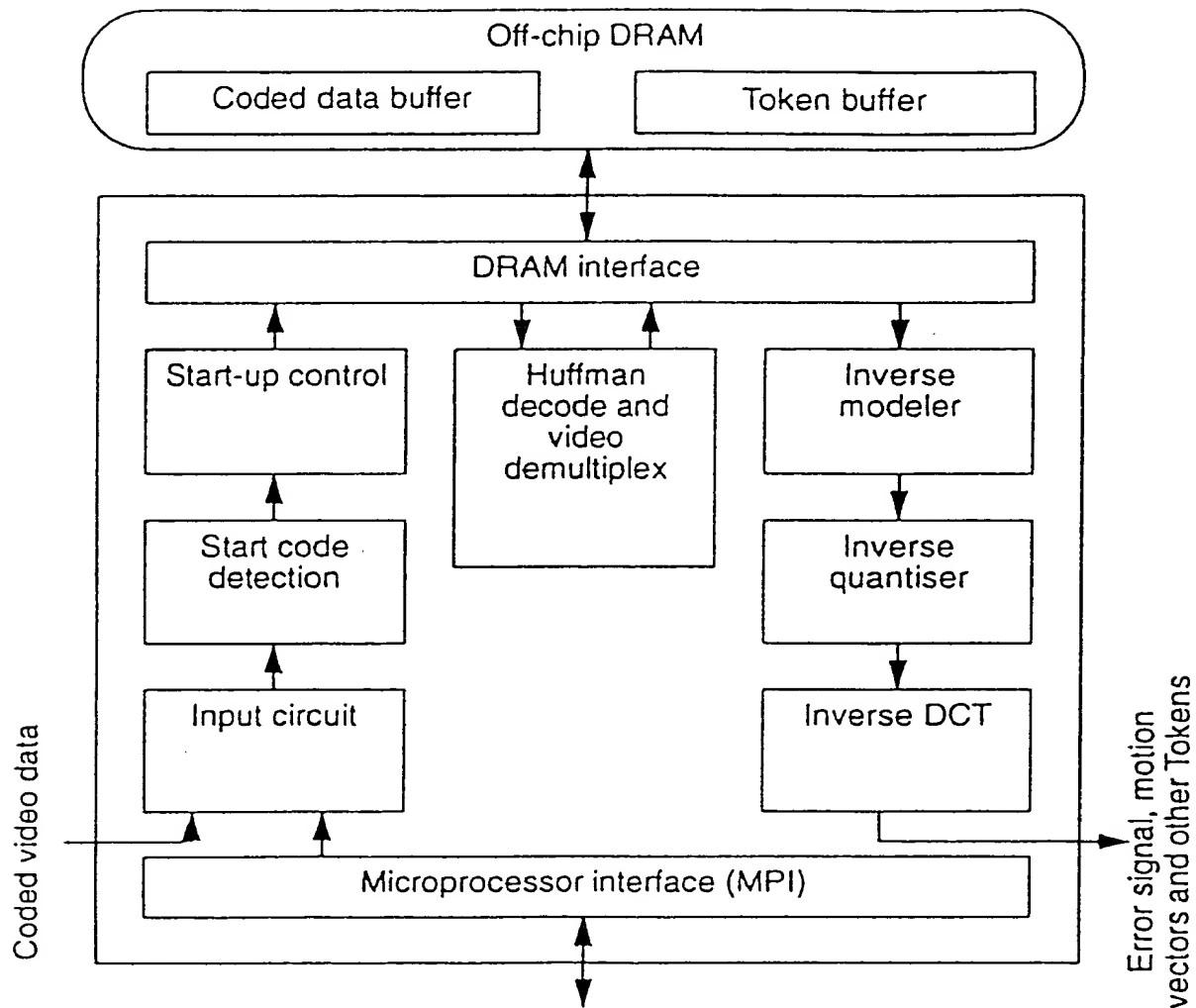
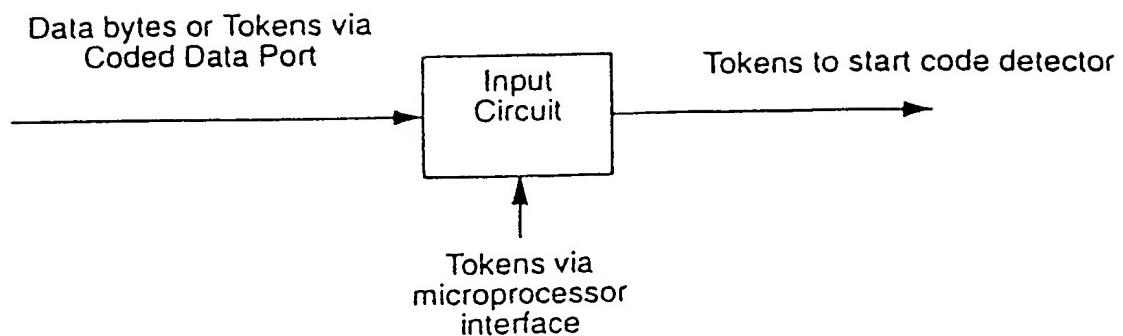


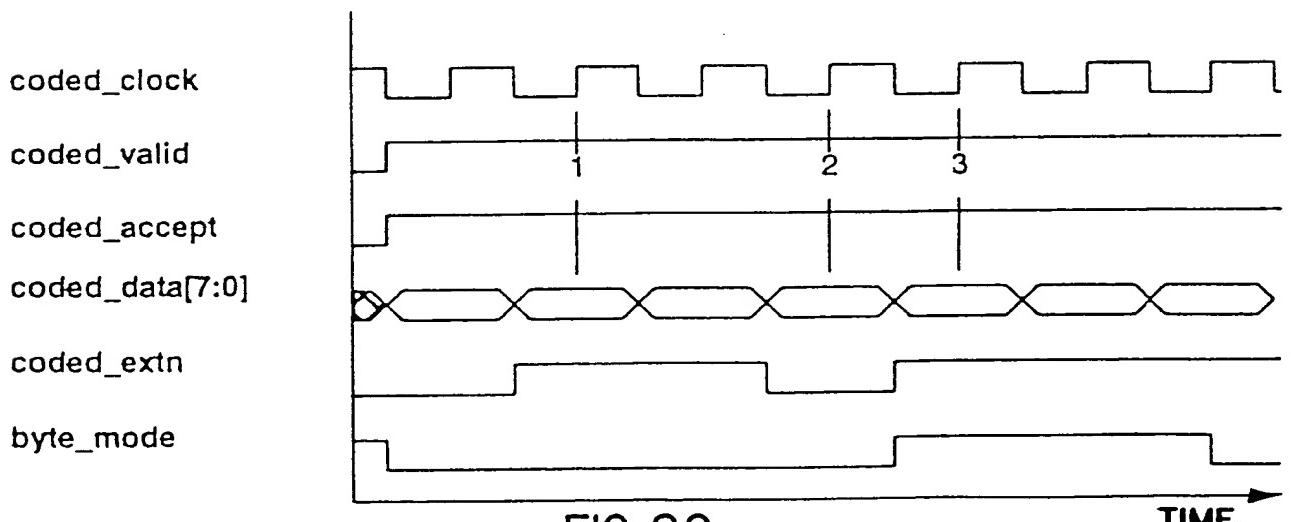
FIG.57



**FIG.58**



**FIG.59**



**FIG.60**

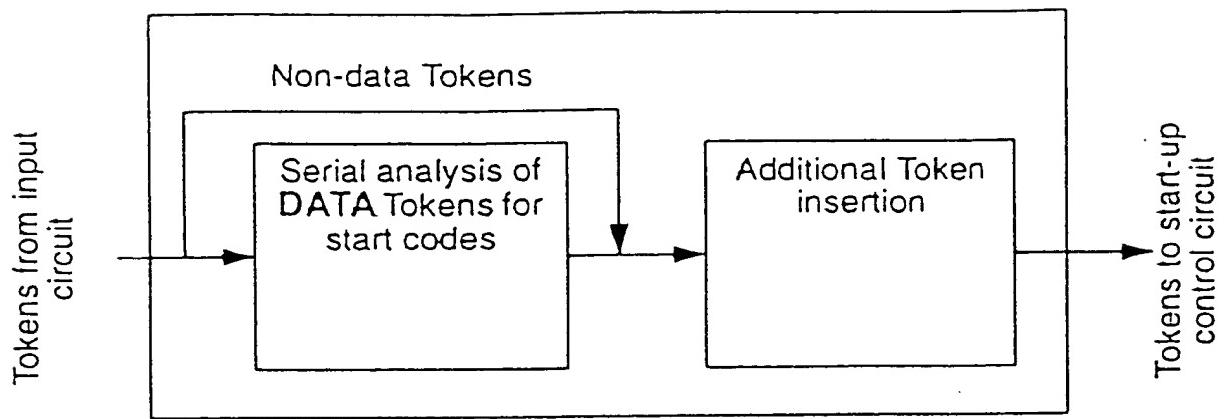


FIG.61

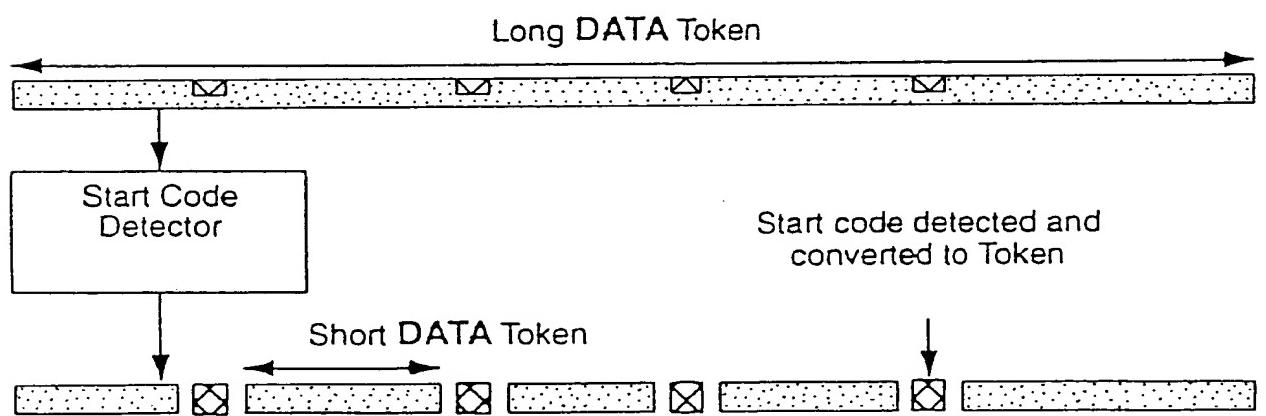


FIG.62

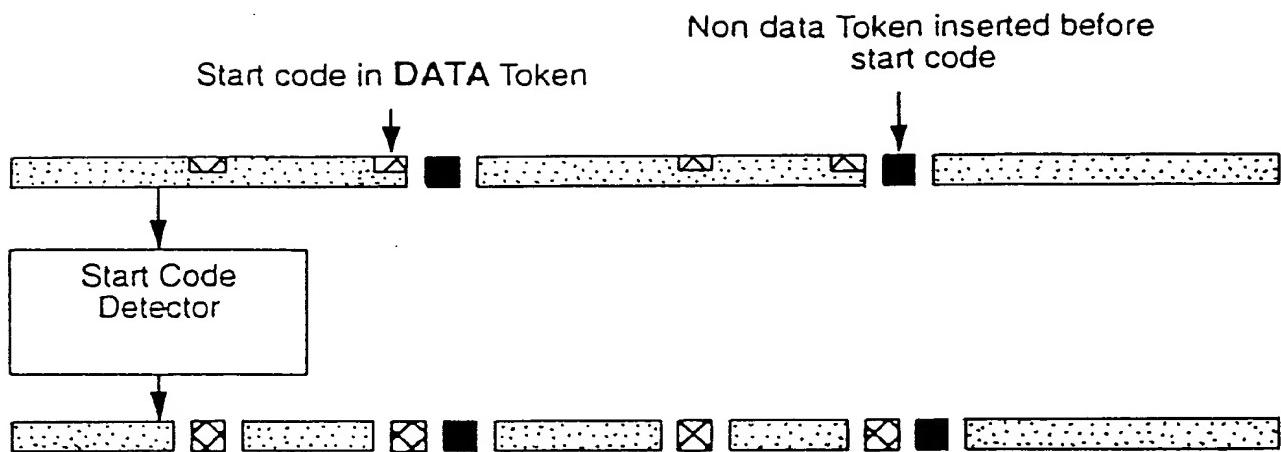


FIG.63

This looks like an MPEG picture start

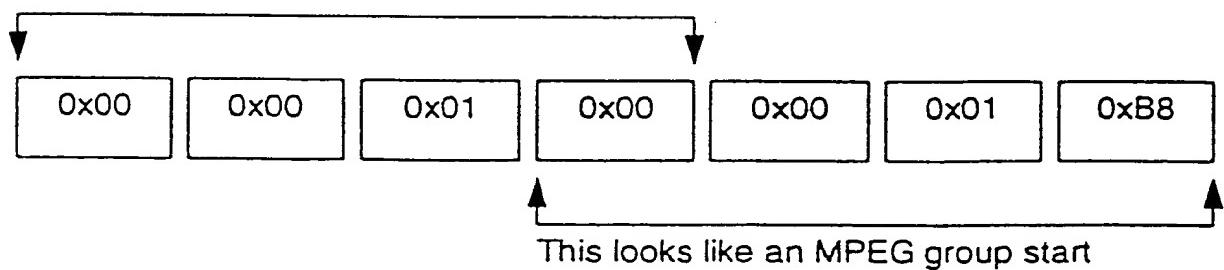


FIG.64

This looks like an MPEG slice start (0x28)

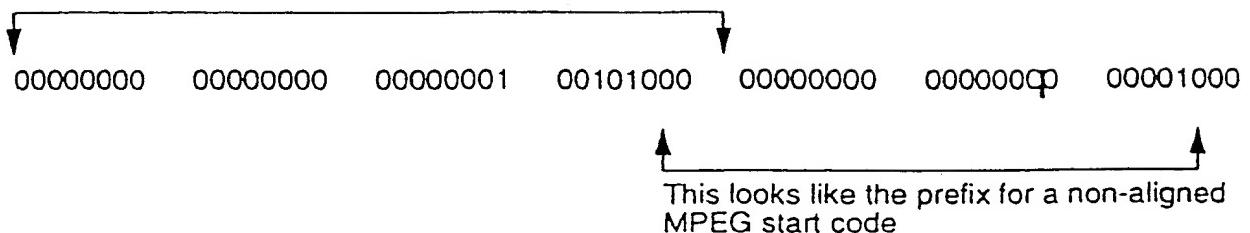


FIG.65

data discarded by discard all data  
or start code search

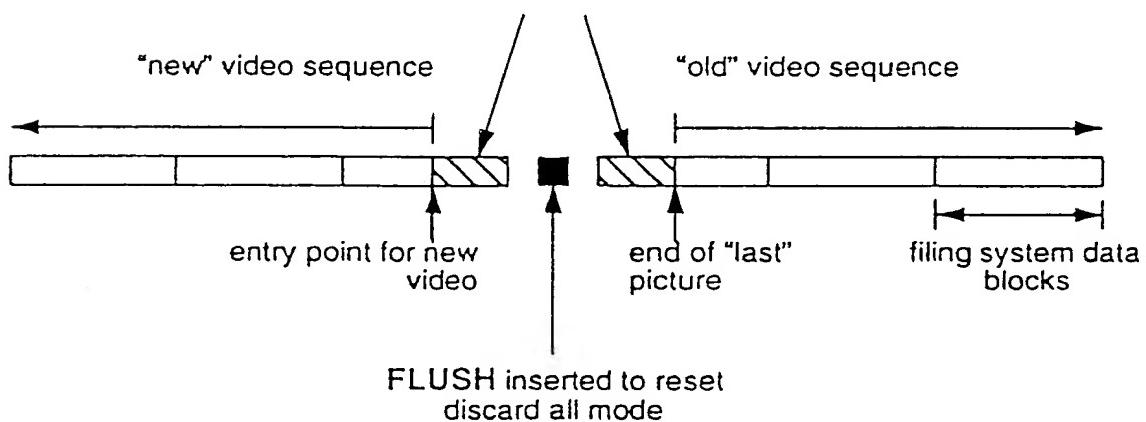


FIG.66

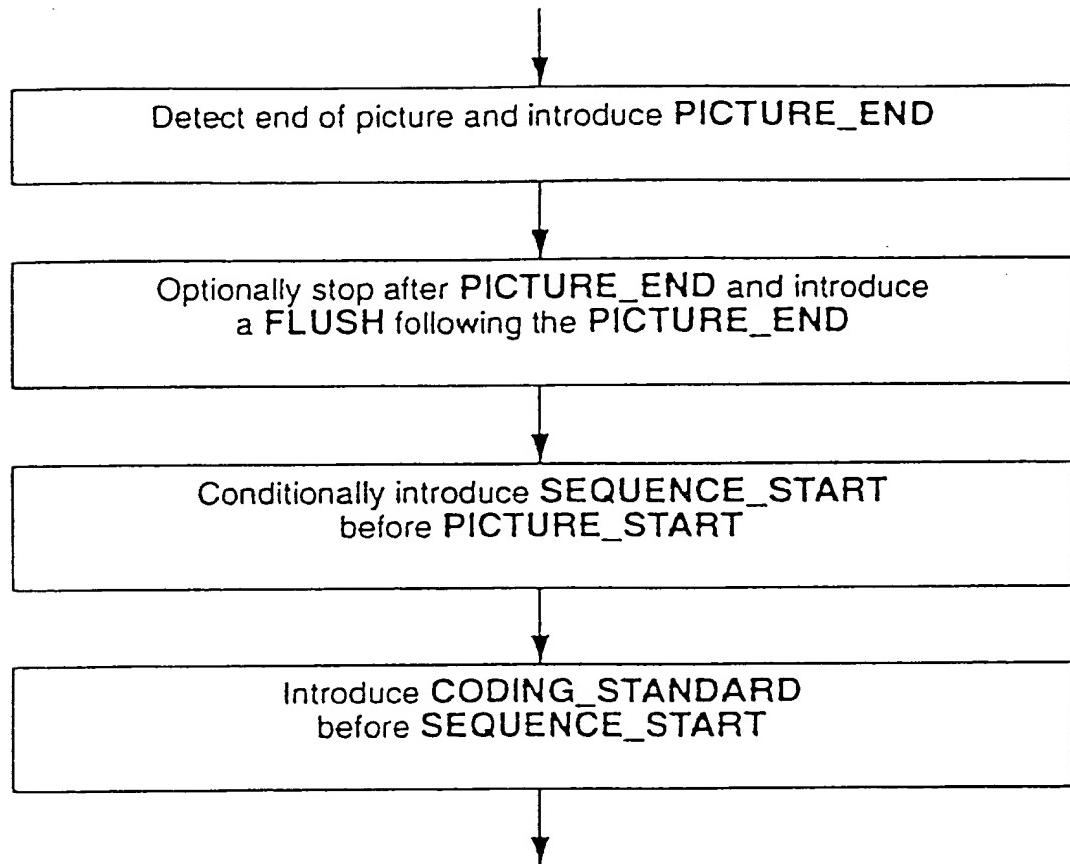


FIG.67

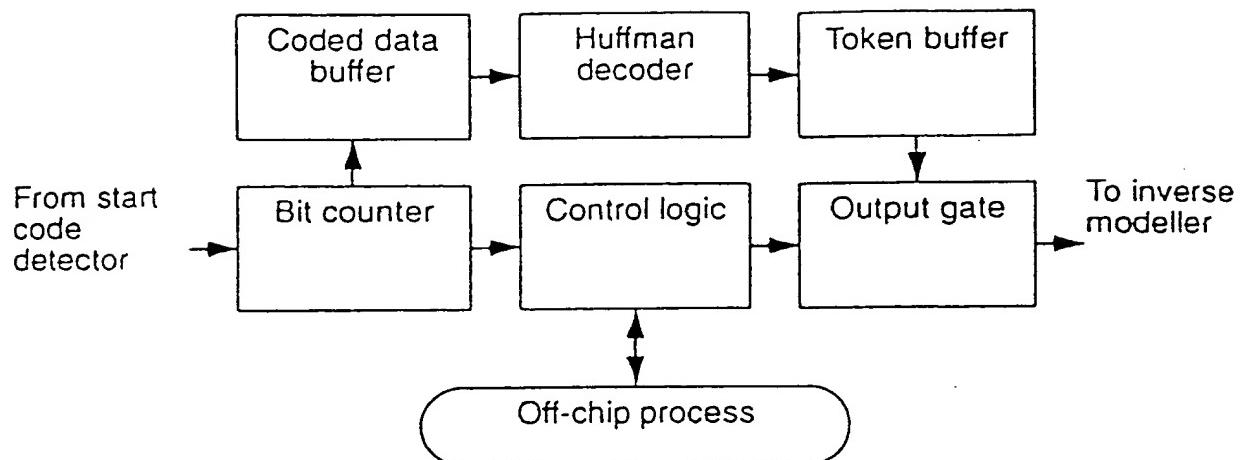


FIG.68

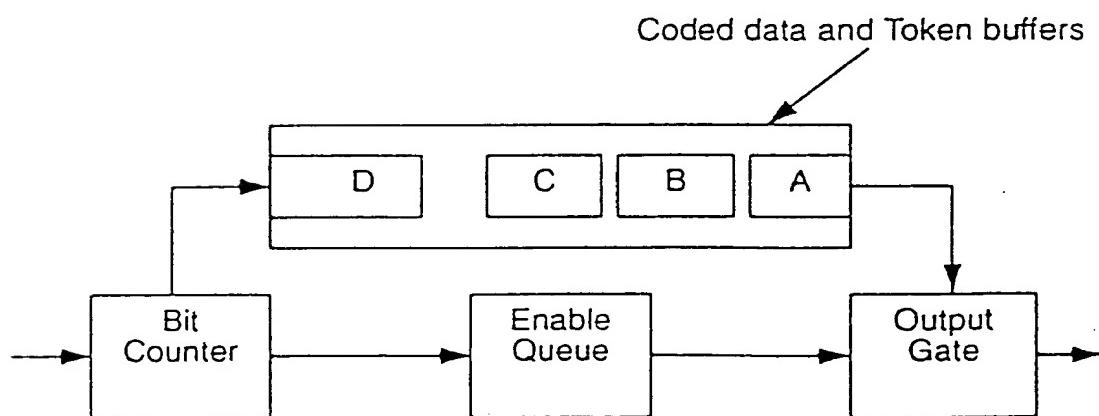
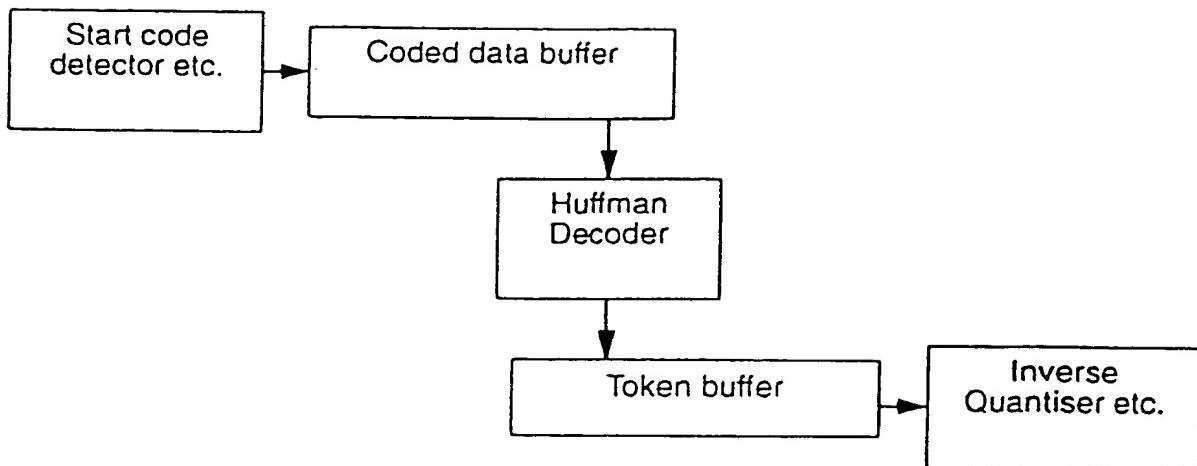
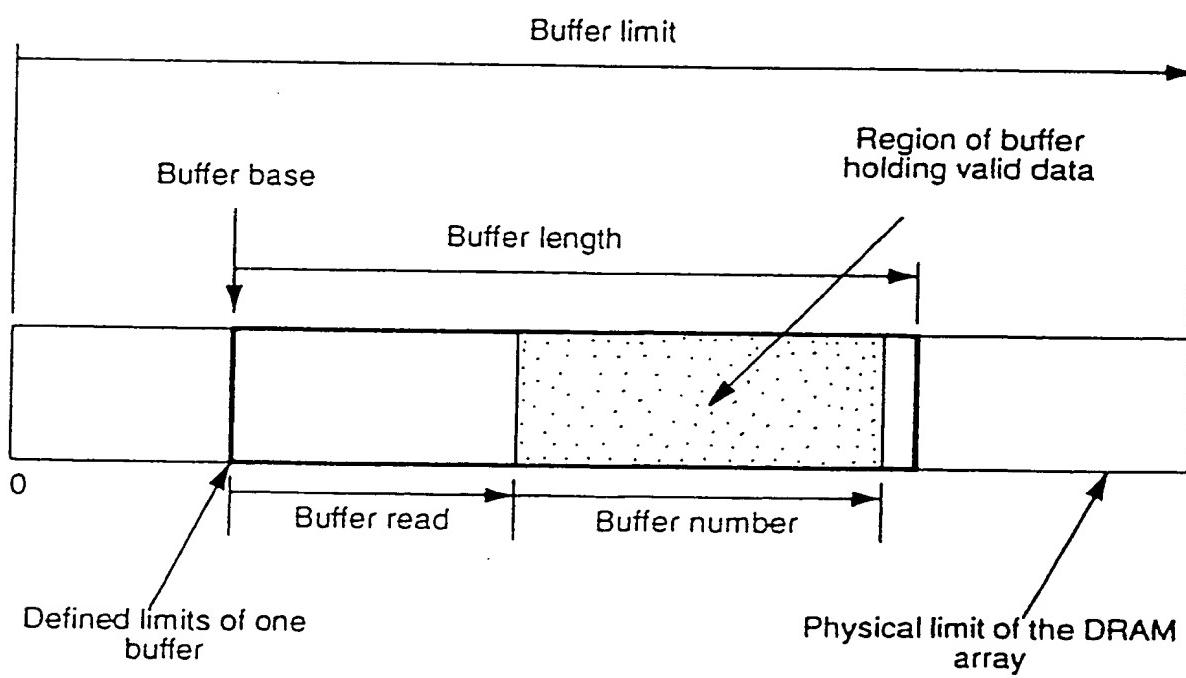


FIG.69



**FIG.70**



**FIG.71**

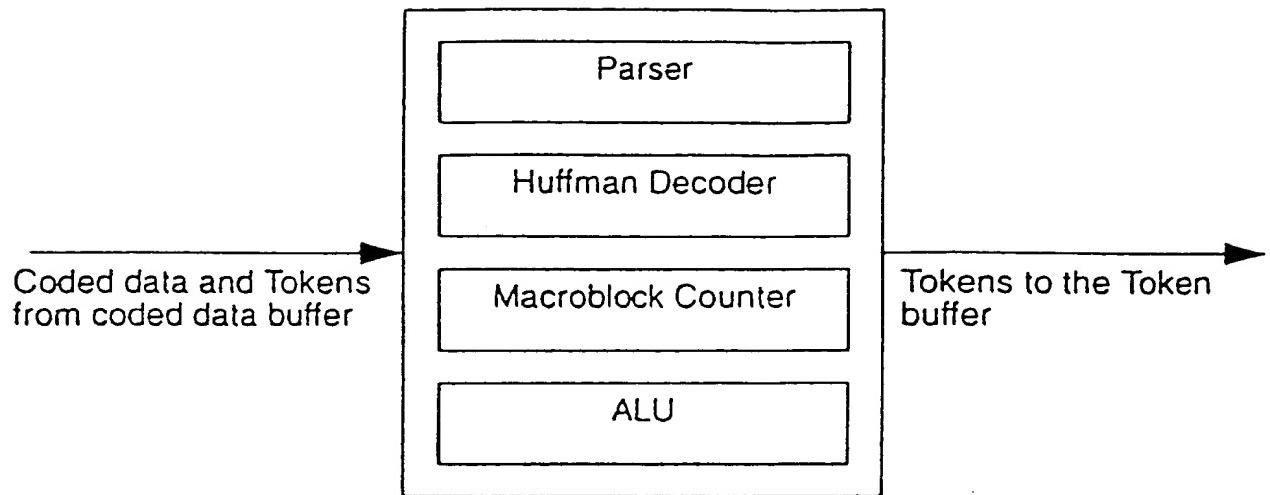


FIG.72

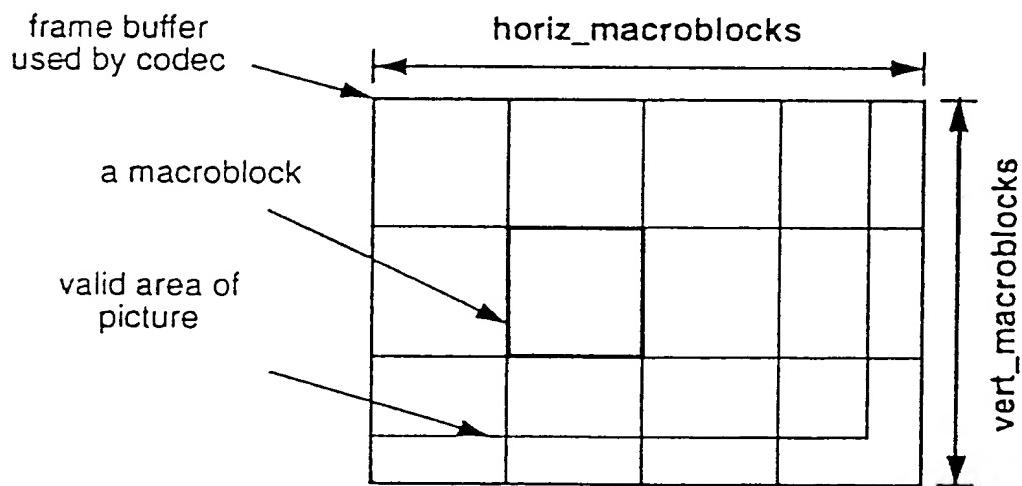


FIG.73

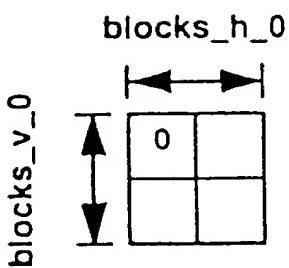


FIG.74A

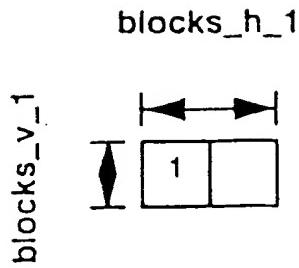


FIG.74B

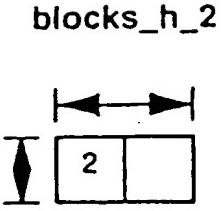


FIG.74C

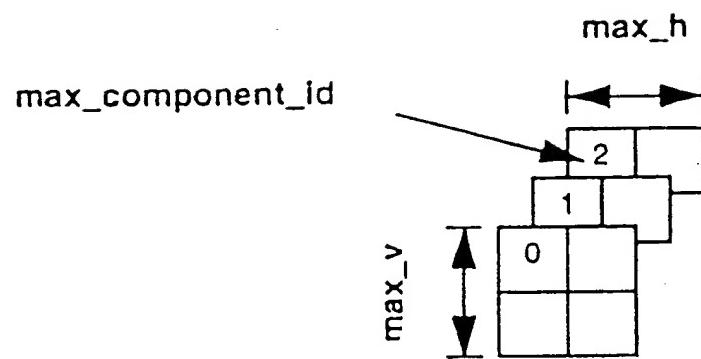


FIG.74D

$$\left\{ \begin{array}{l} \text{horiz\_macroblocks} = \frac{\text{horiz\_pels} + 15}{16} \\ \text{vert\_macroblocks} = \frac{\text{vert\_pels} + 15}{16} \end{array} \right.$$

FIG.75

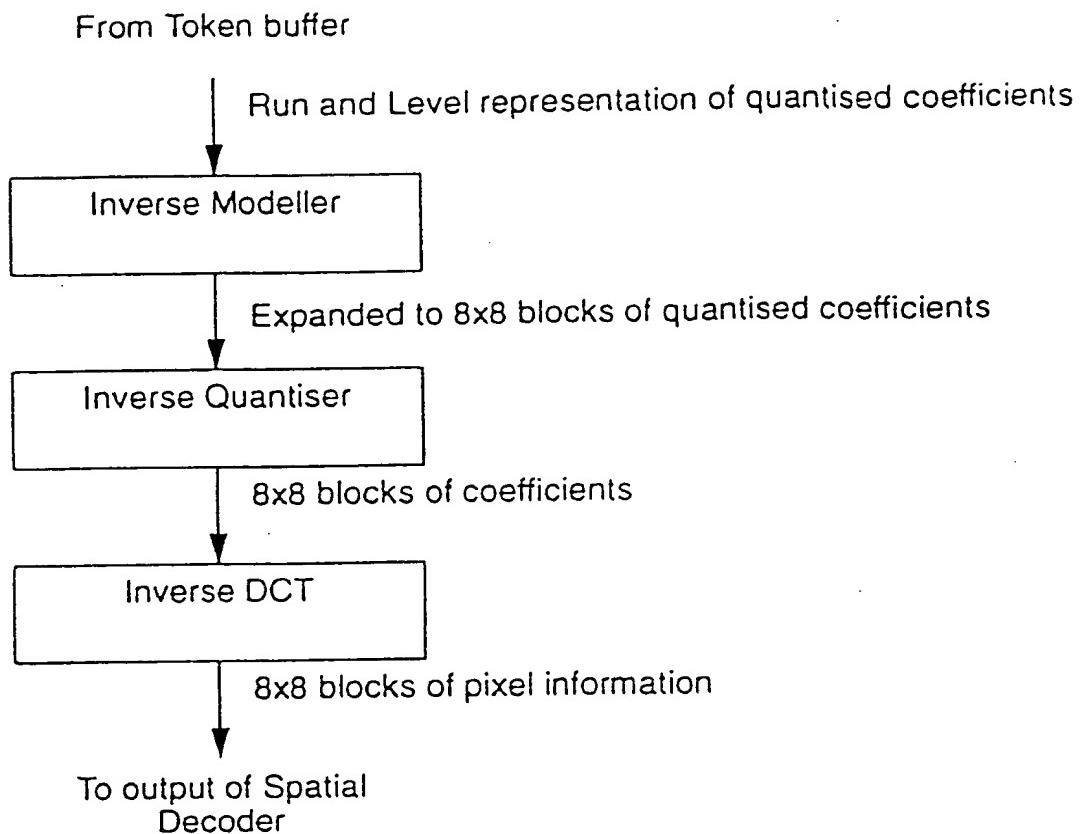


FIG.76

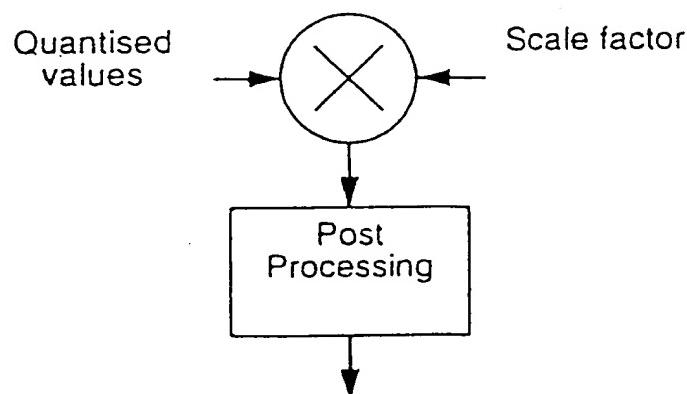


FIG.77

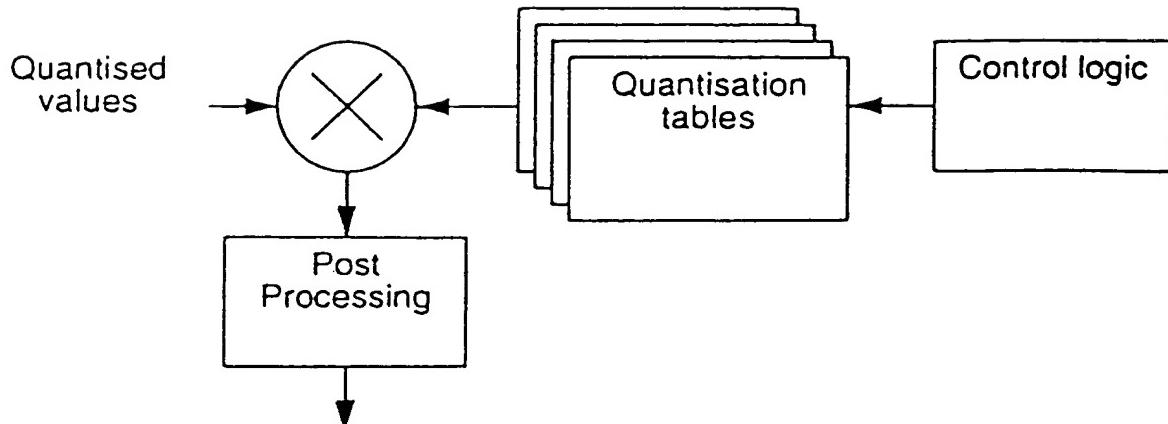


FIG.78

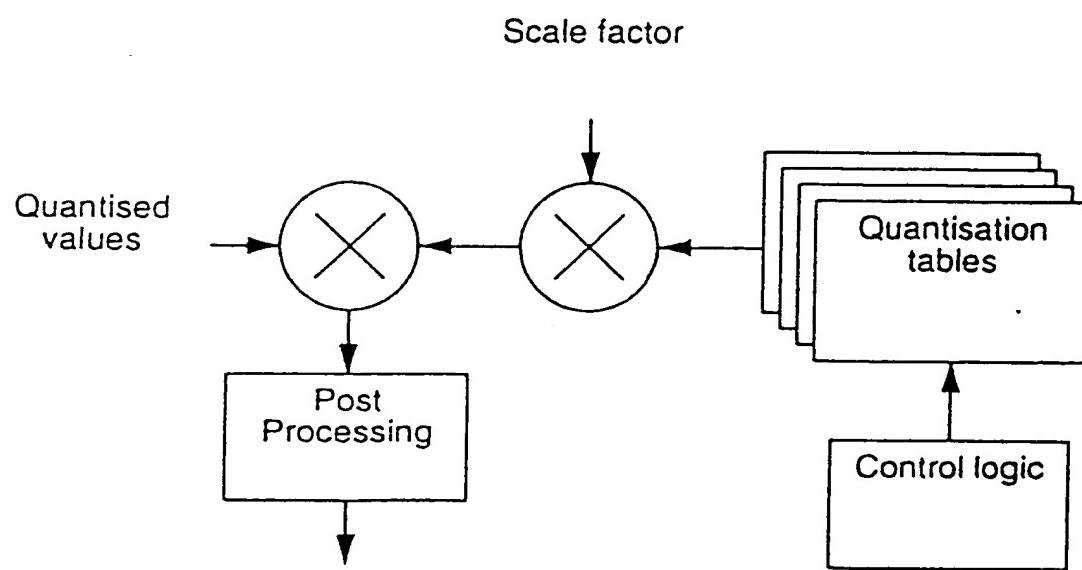


FIG.79

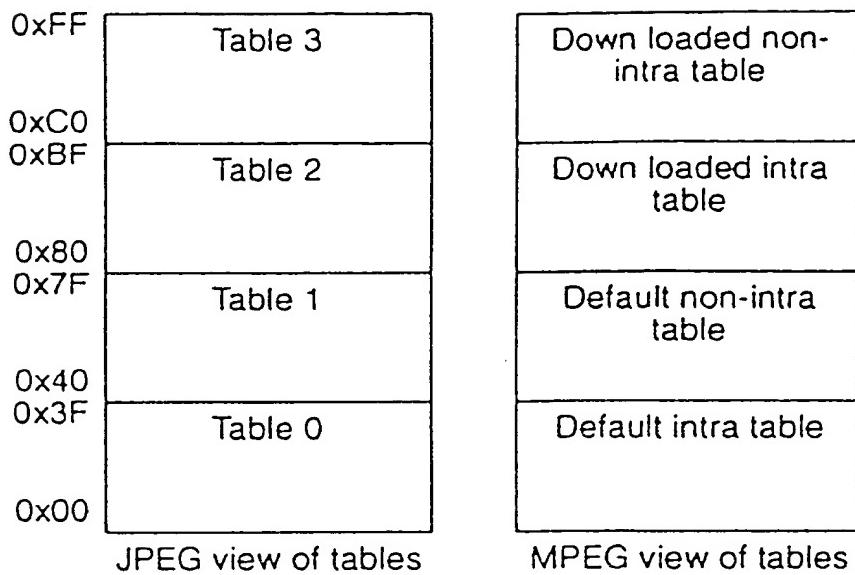


FIG.80

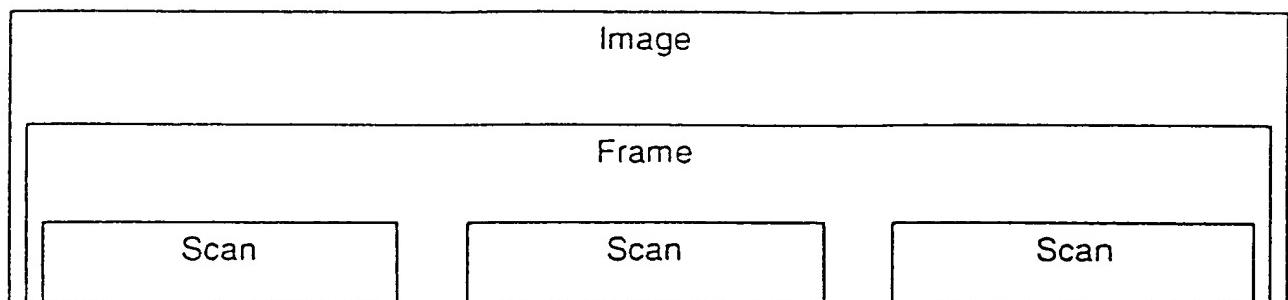


FIG.81

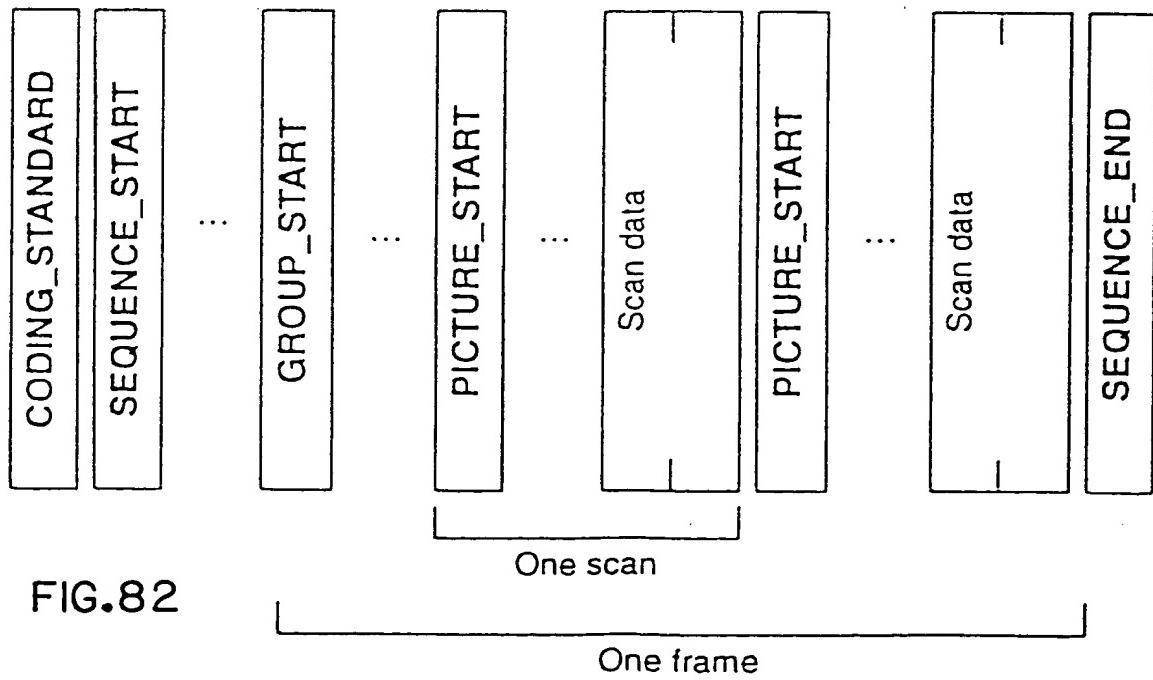


FIG.82

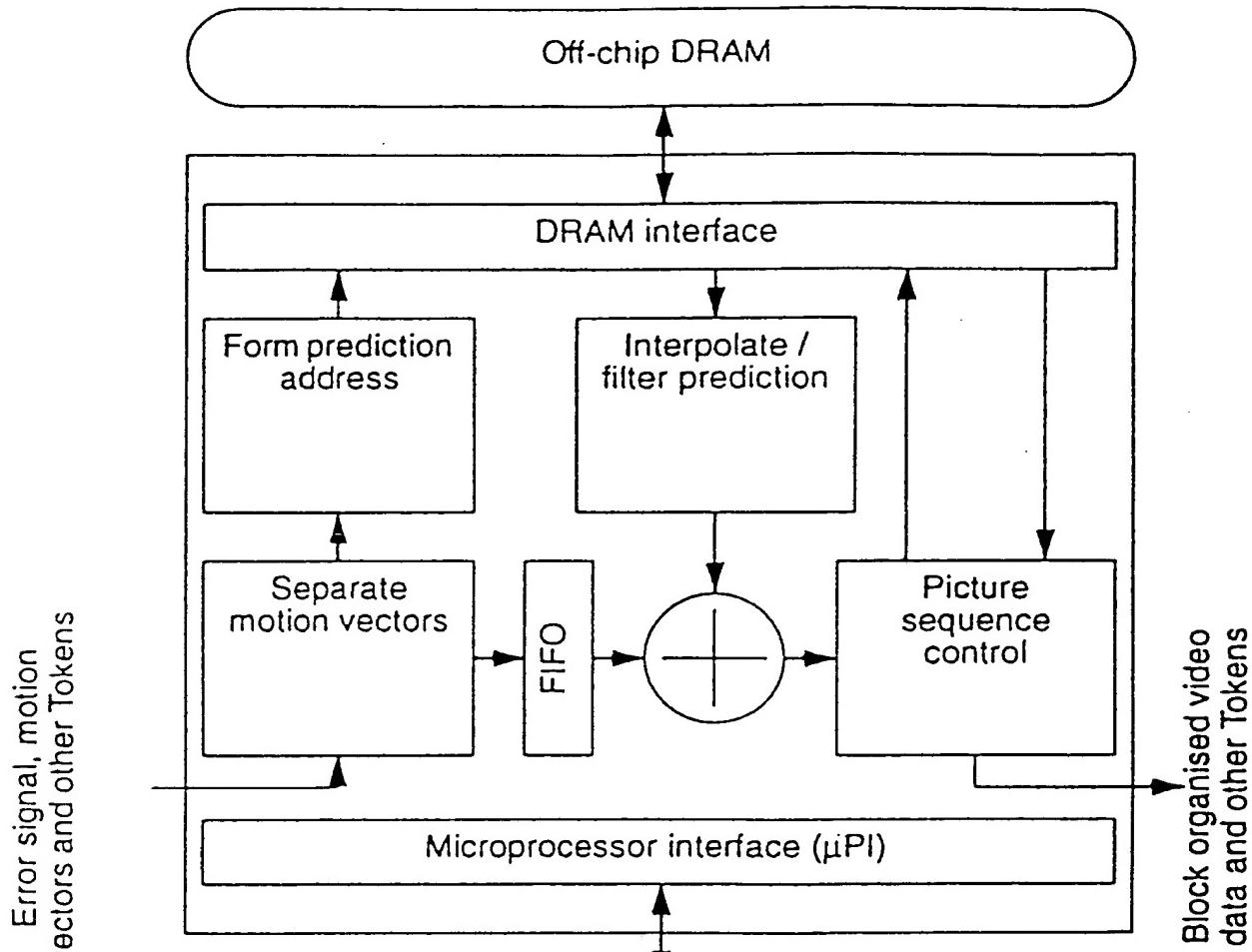


FIG.83

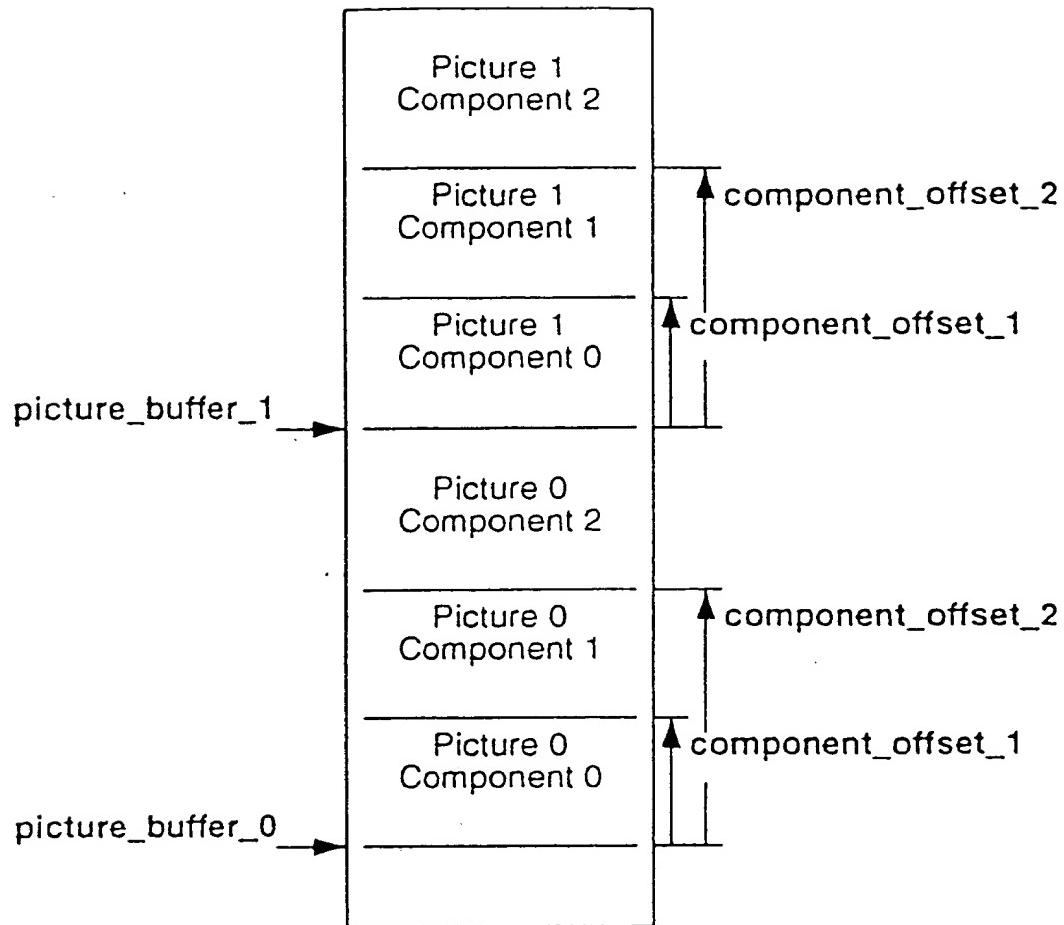


FIG.84

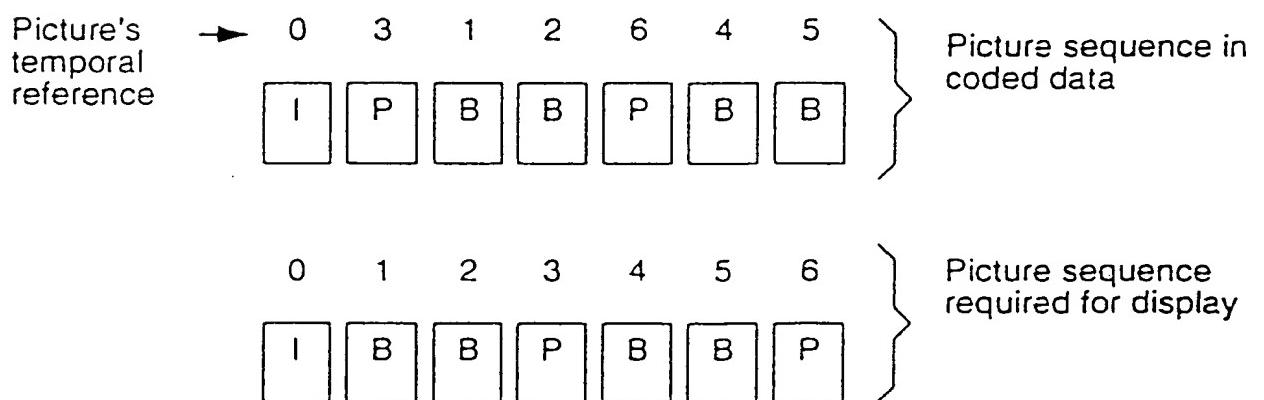


FIG.85

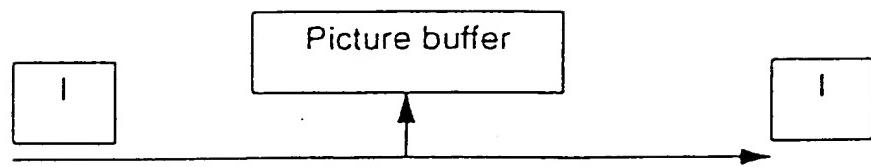


FIG.86

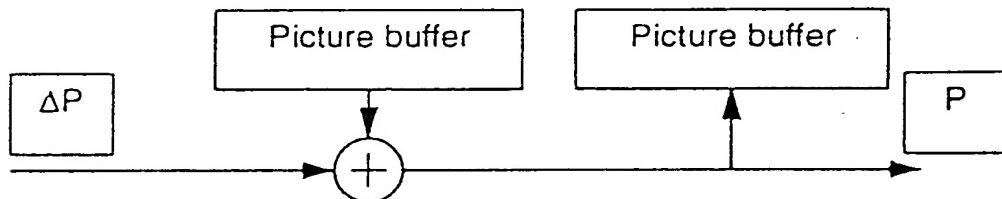


FIG.87

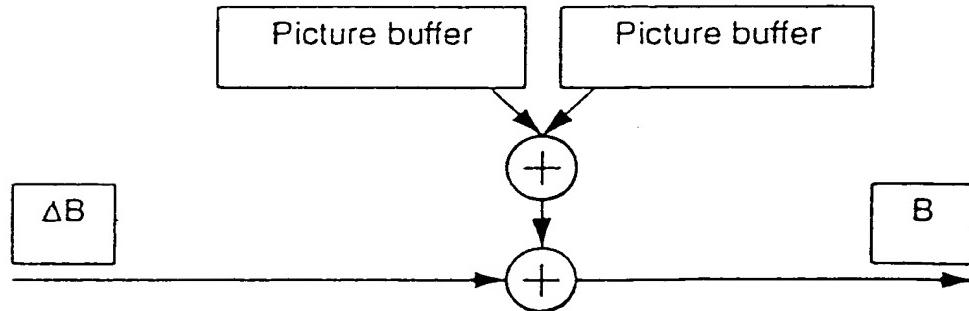
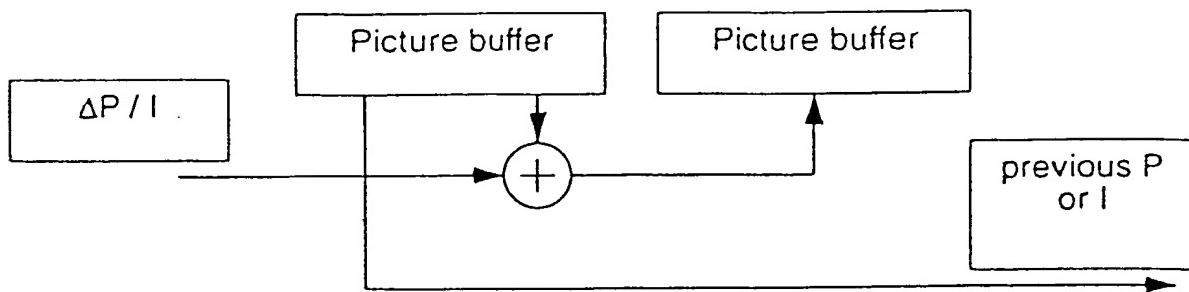
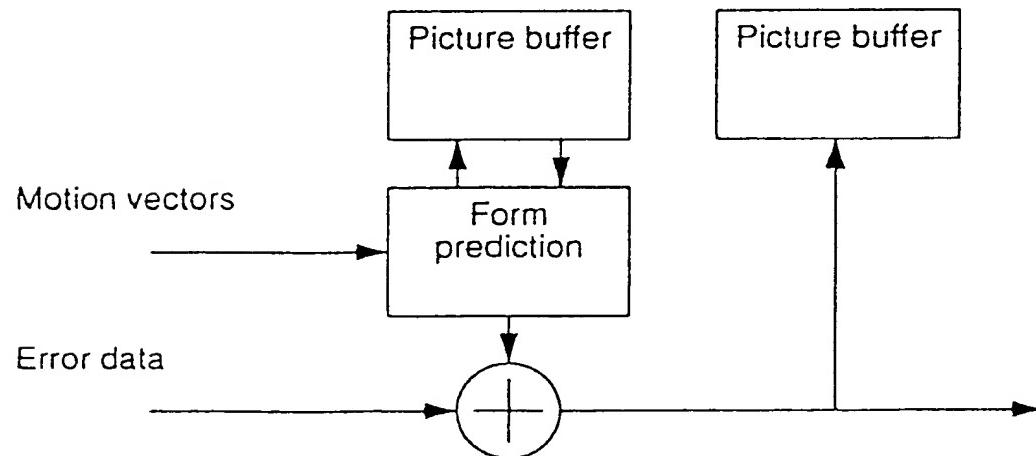


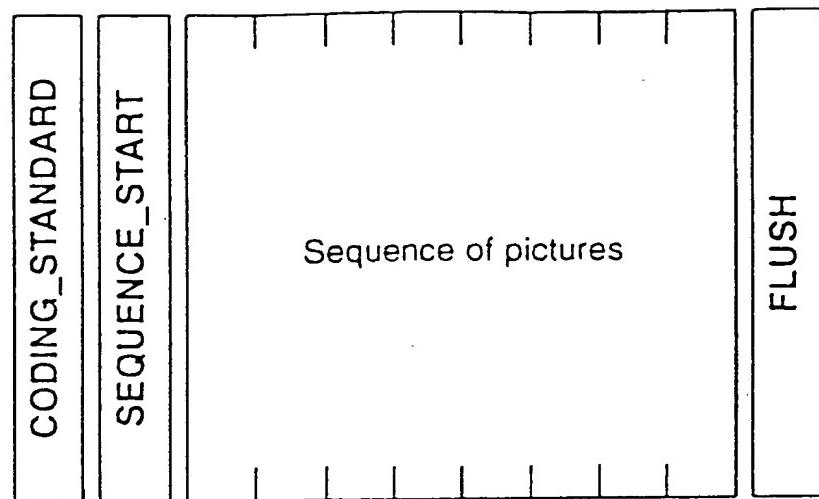
FIG.88



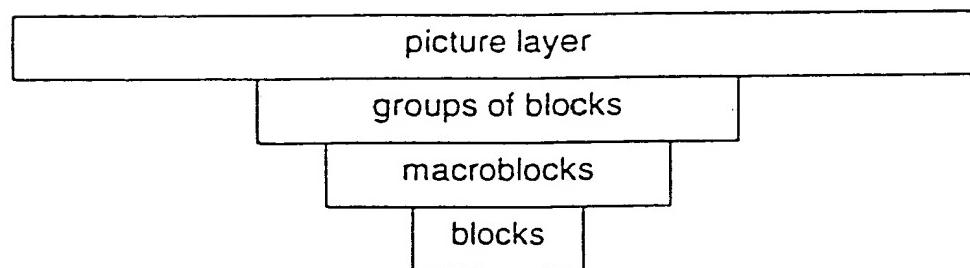
**FIG.89**



**FIG.90**



**FIG.91**



**FIG.92**

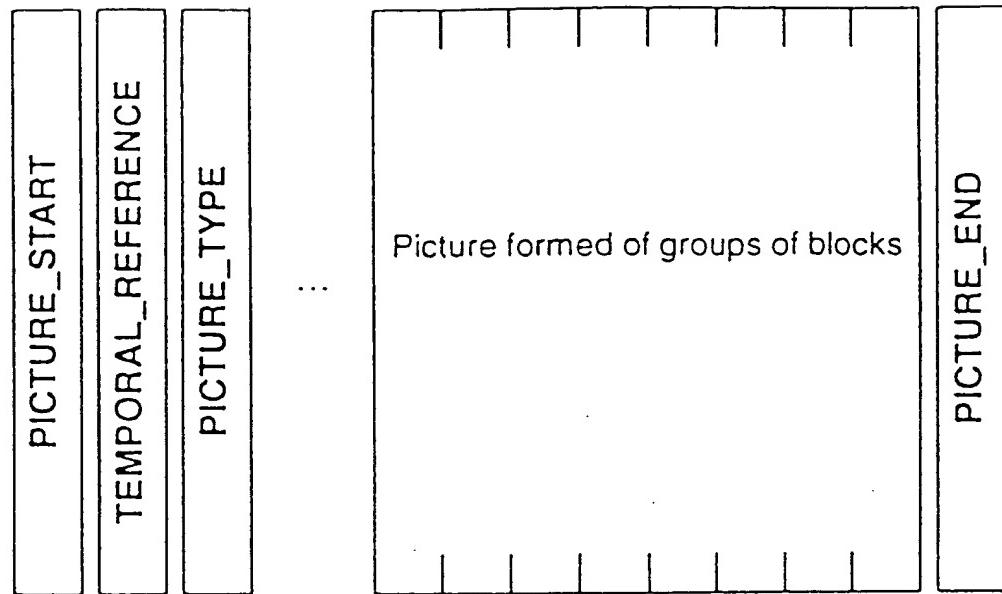
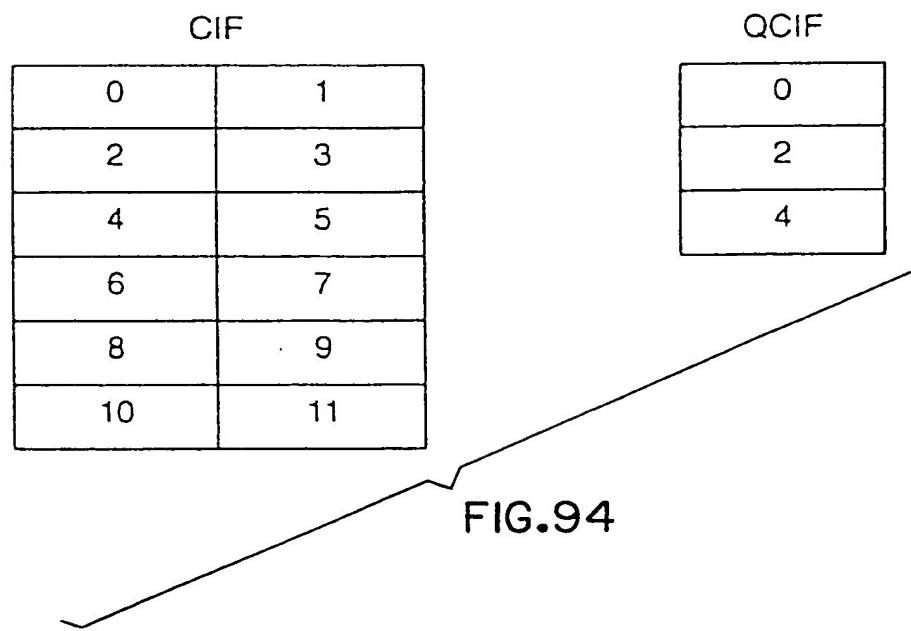
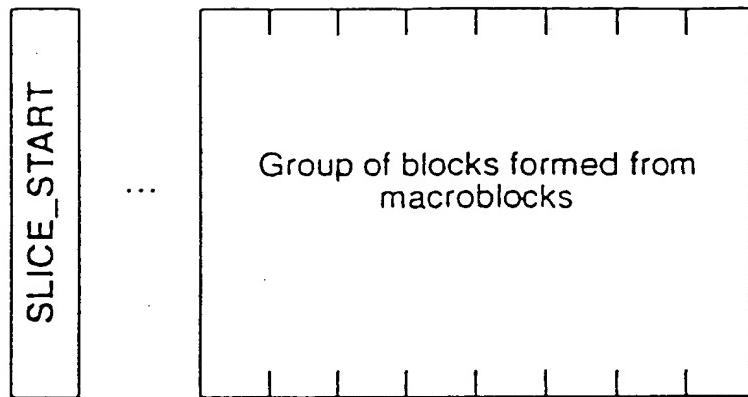


FIG.93





**FIG.95**

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33

**FIG.96**

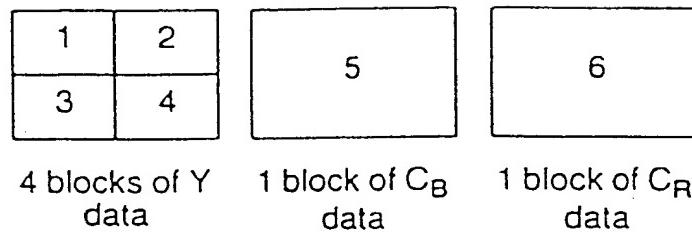


FIG.97

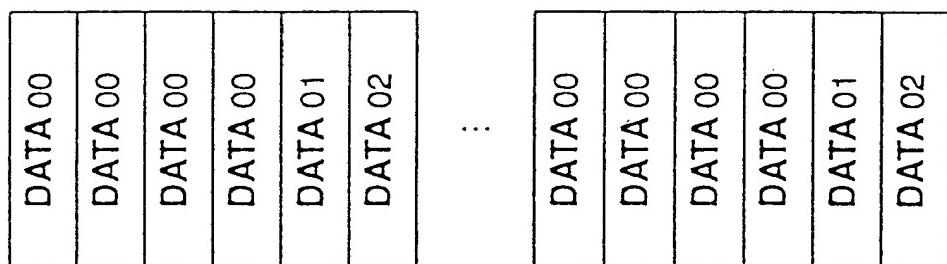


FIG.98

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
.							
59	58	59	60	61	62	63	64

FIG.99

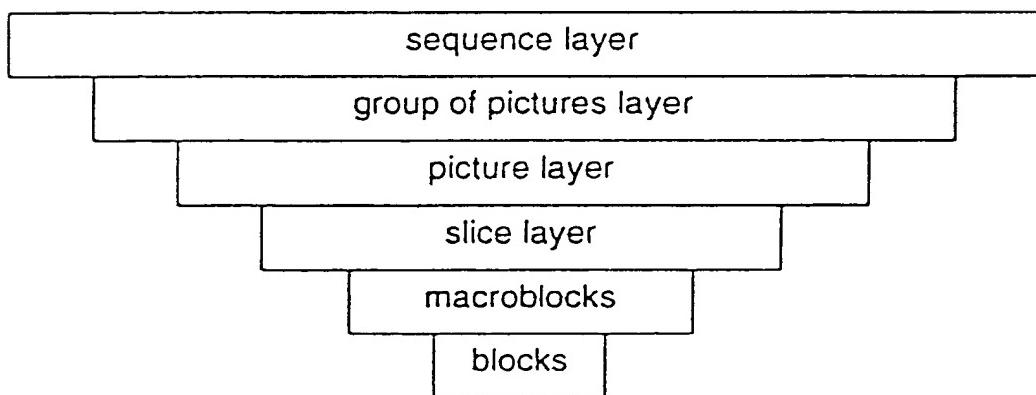


FIG.100

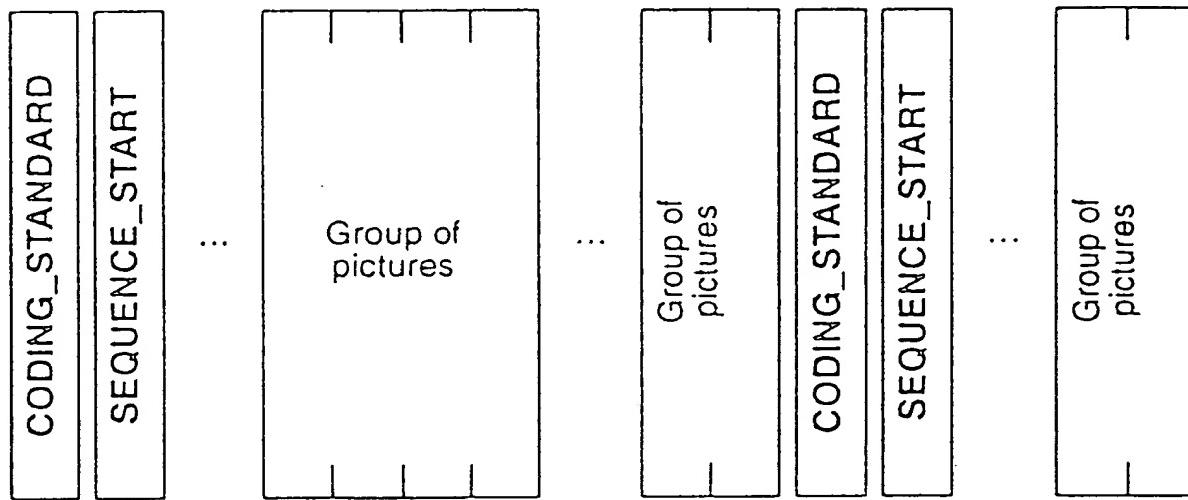


FIG.101

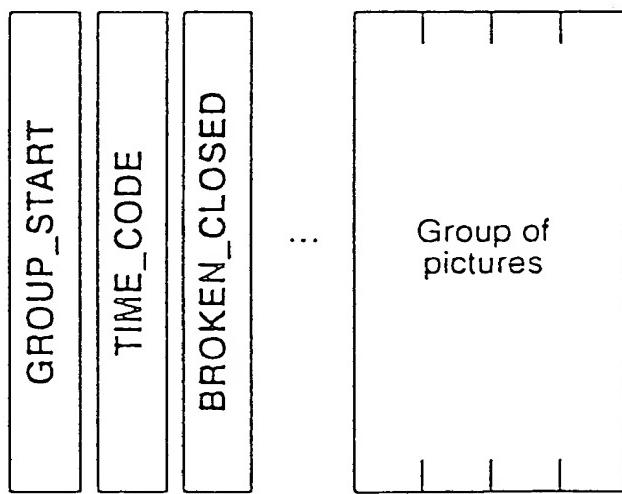


FIG.102

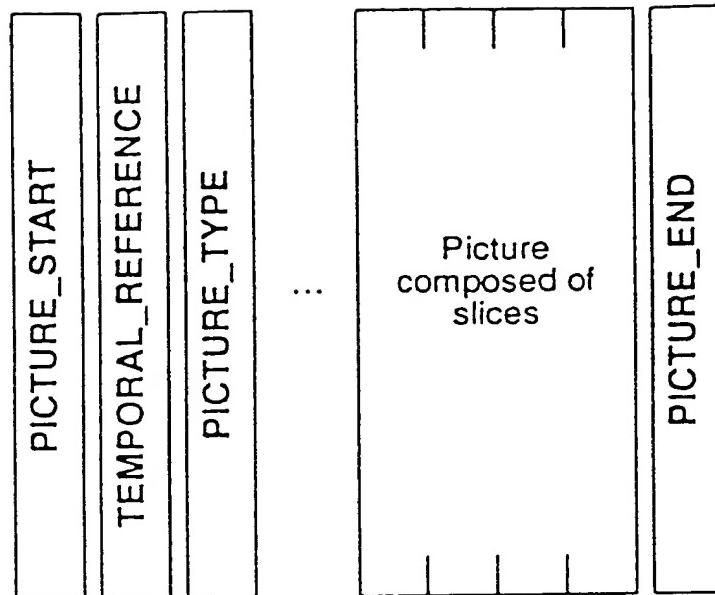


FIG.103

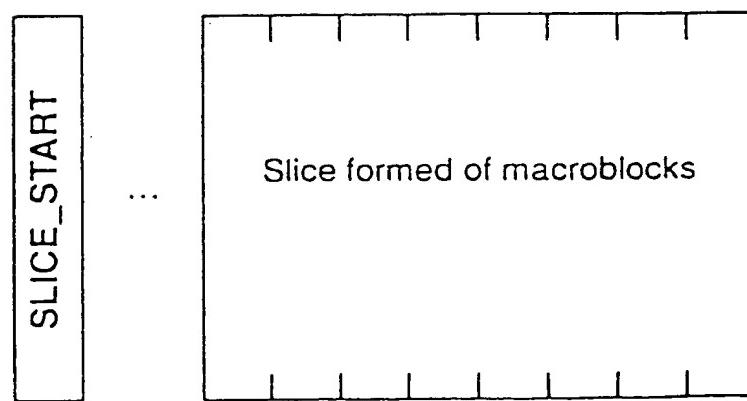


FIG.104

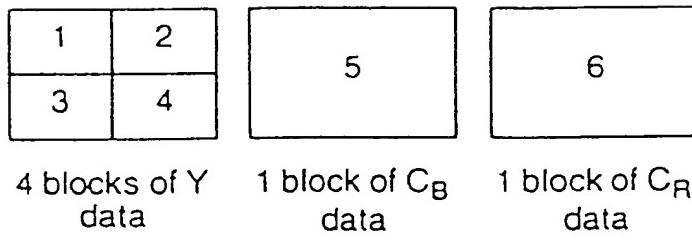


FIG. I 05

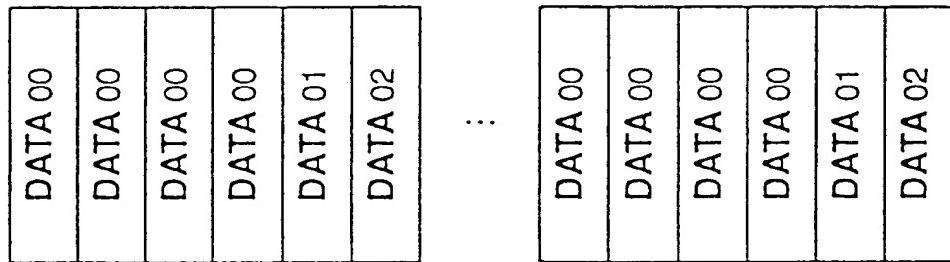


FIG. I 06

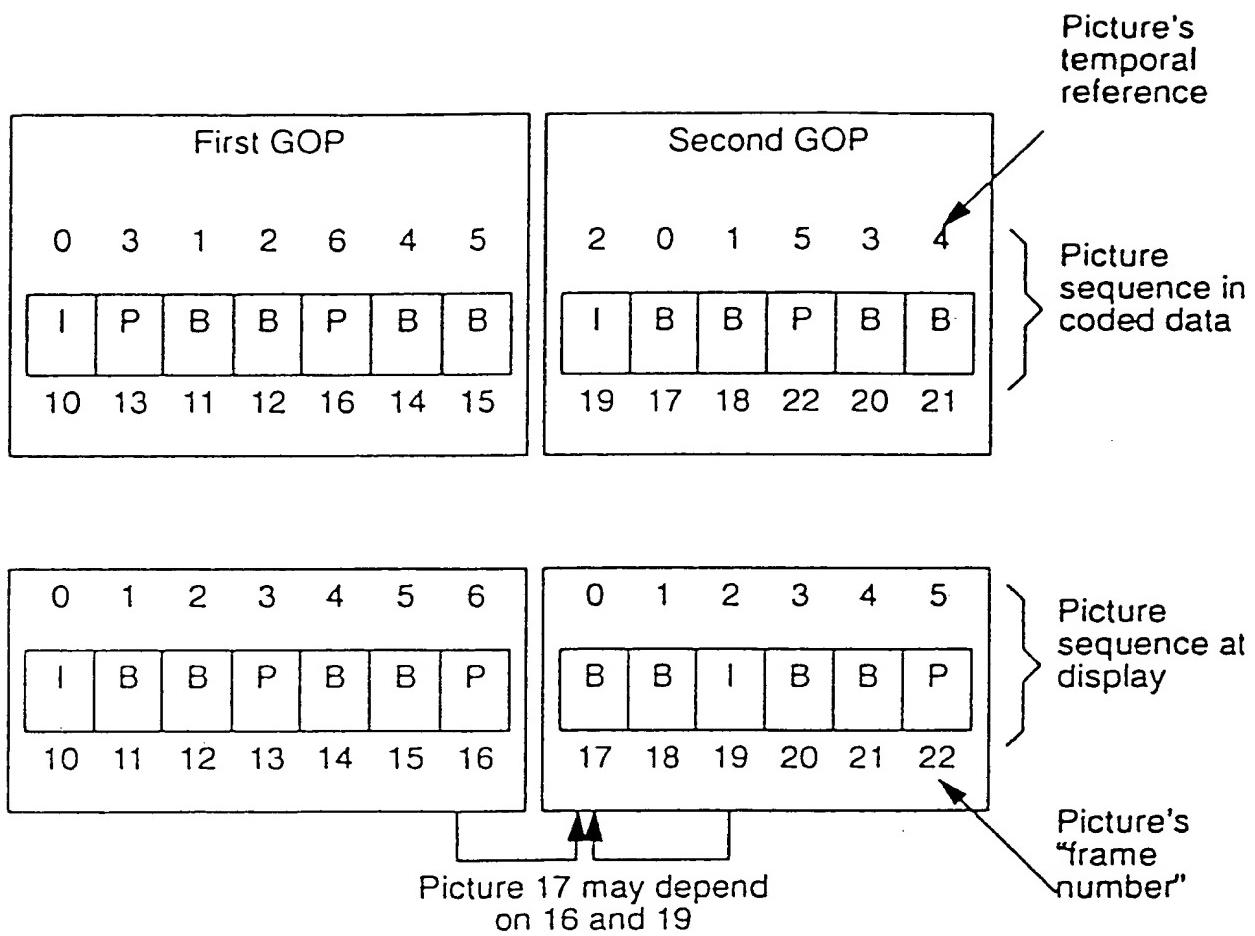


FIG. 107



FIG. I 08

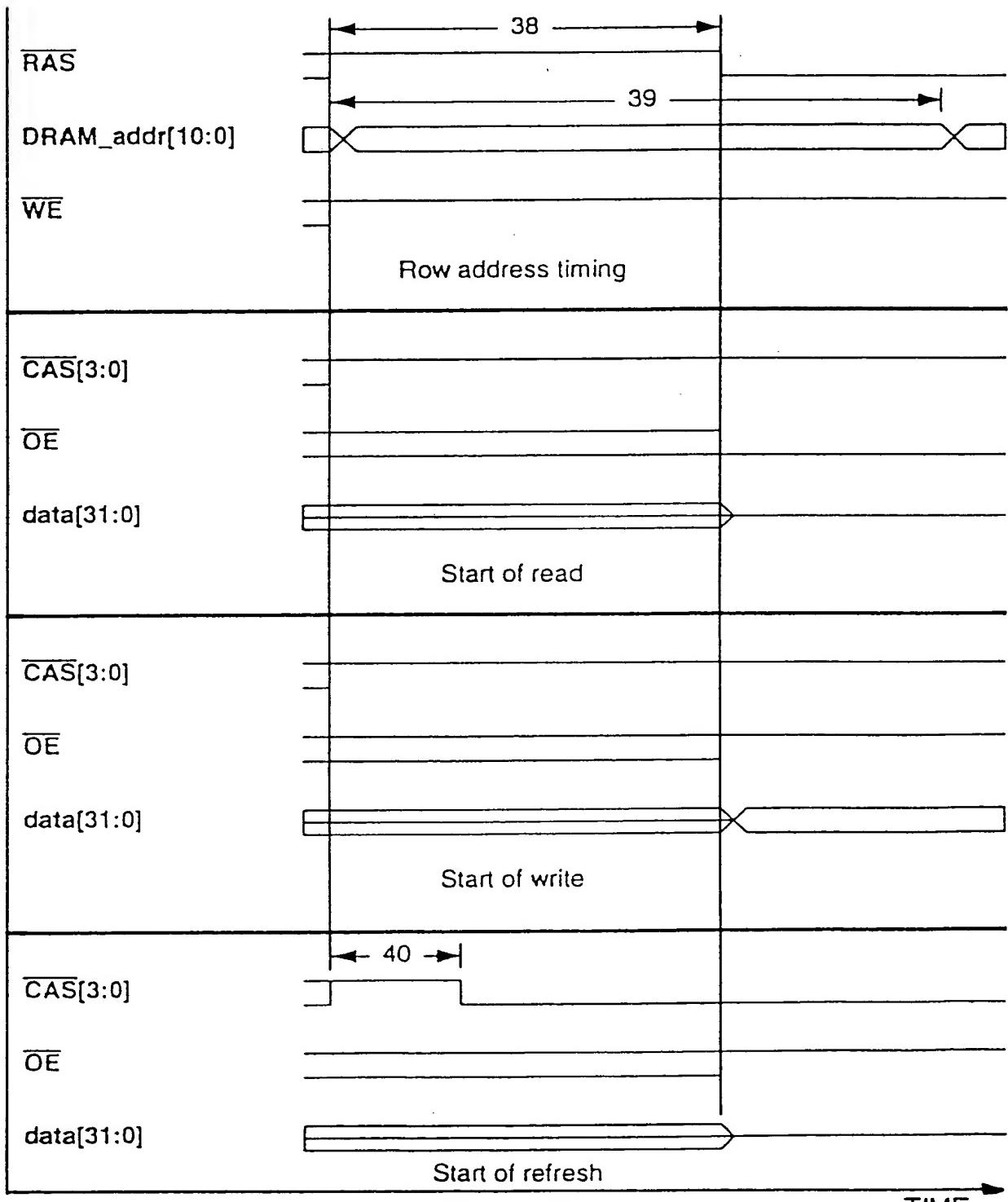
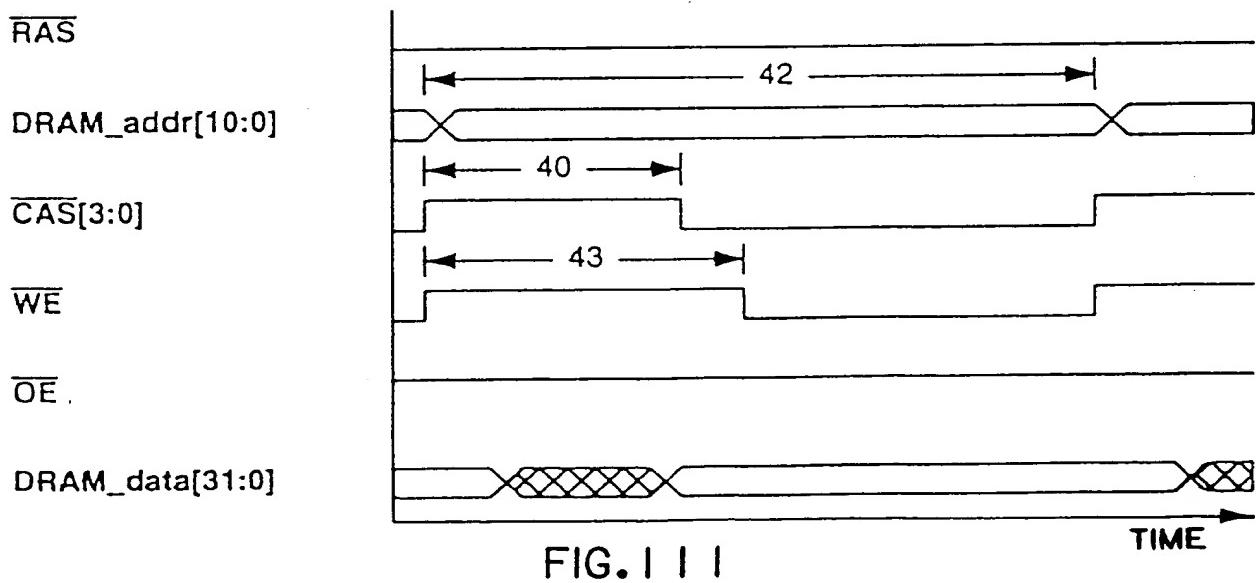
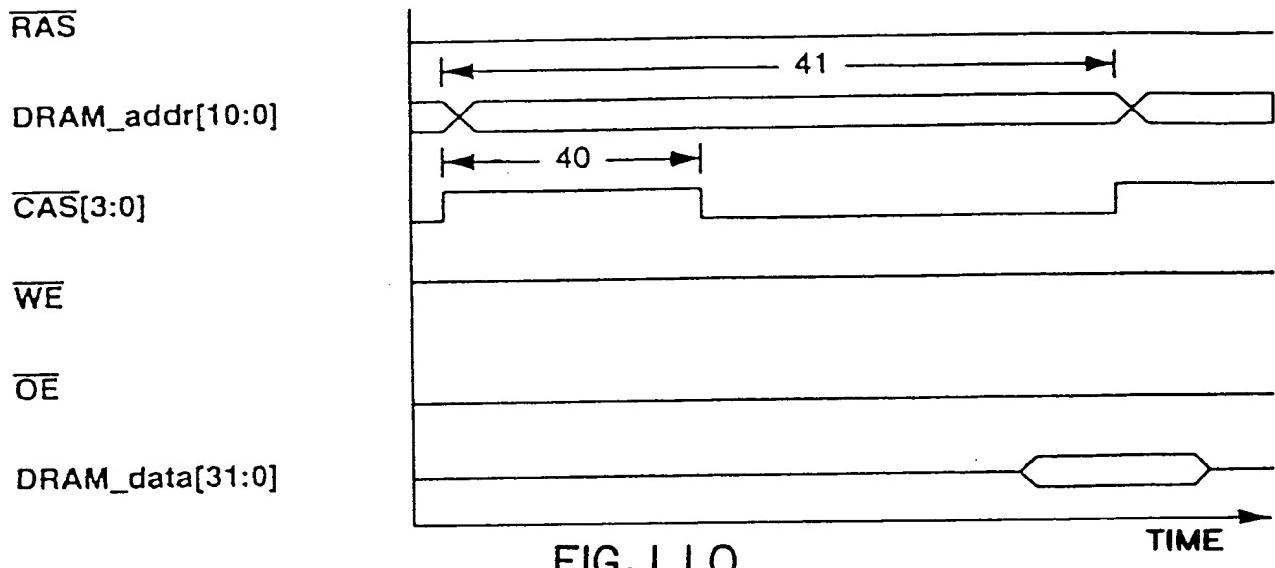


FIG. I 09

TIME



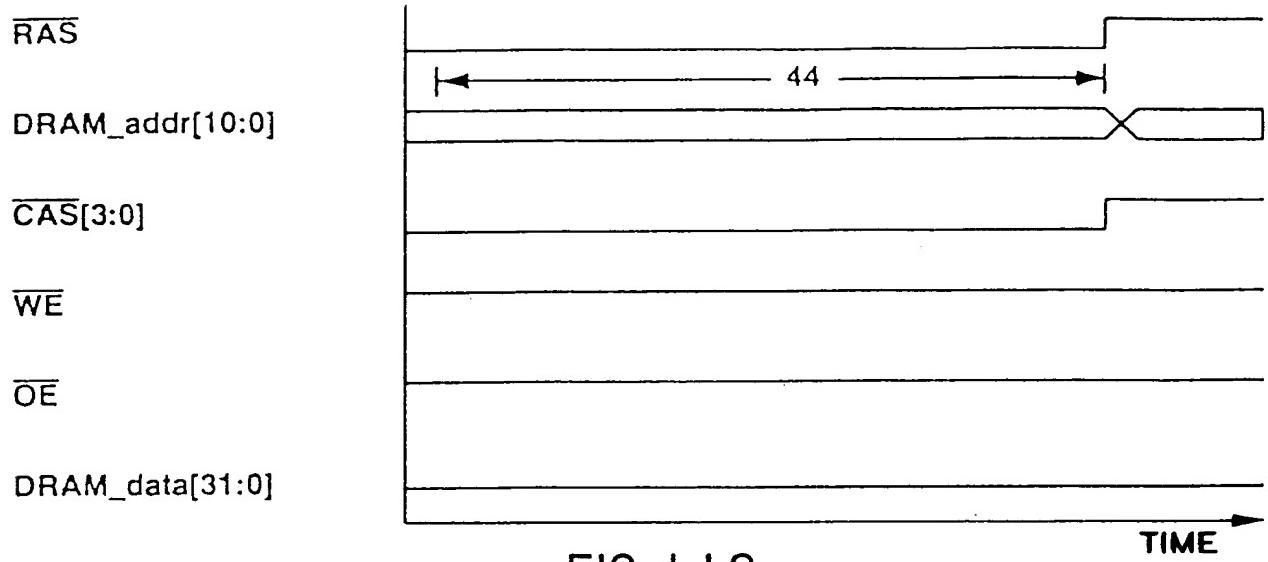


FIG.112

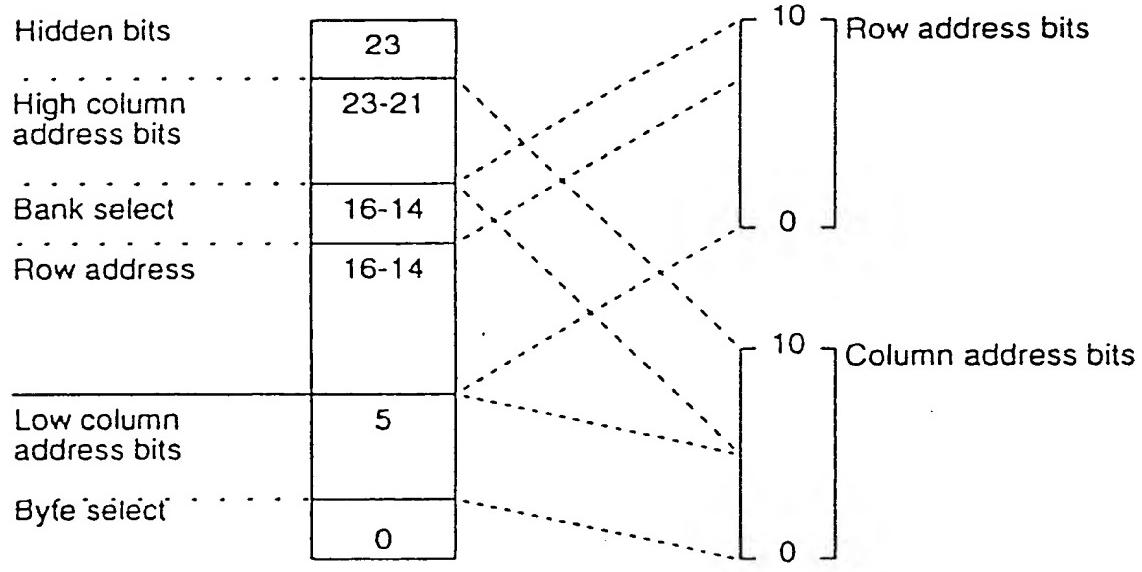
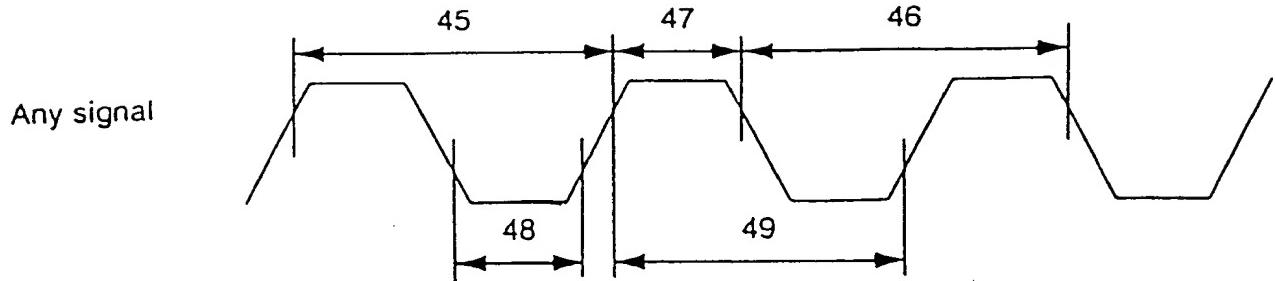
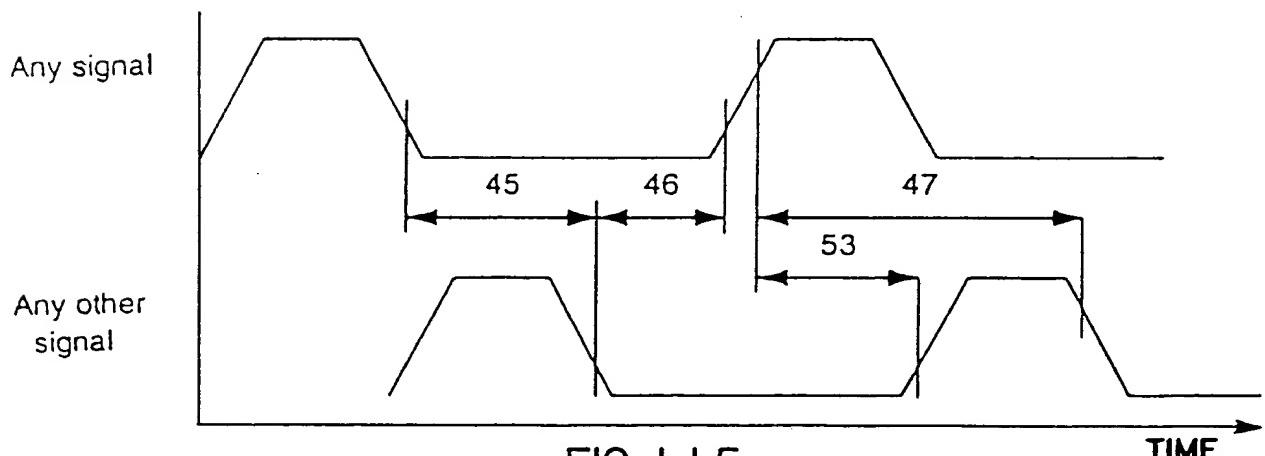


FIG.113



**FIG. 114**



**FIG. 115**

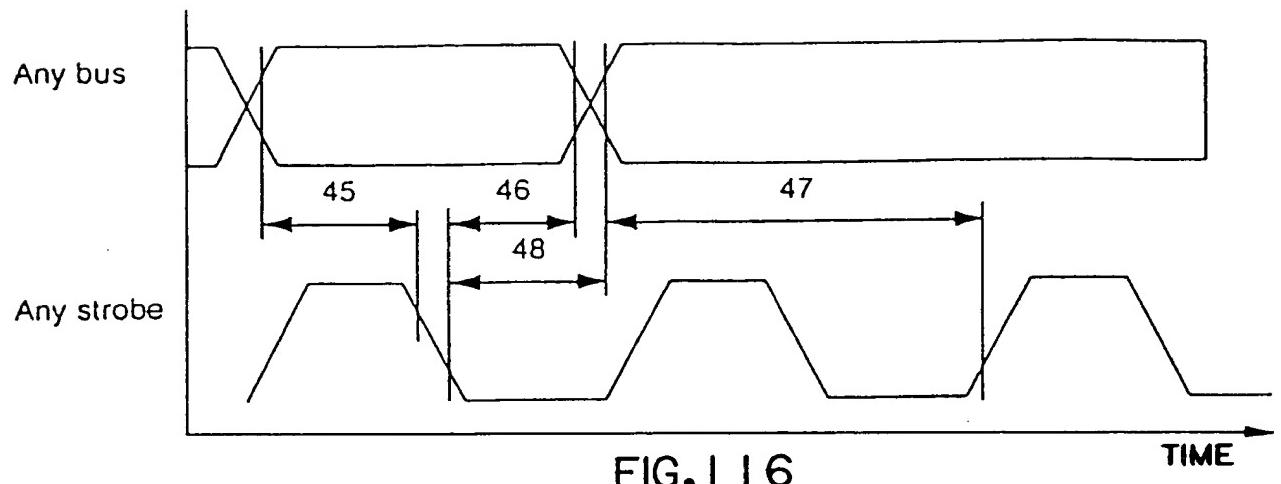


FIG.116

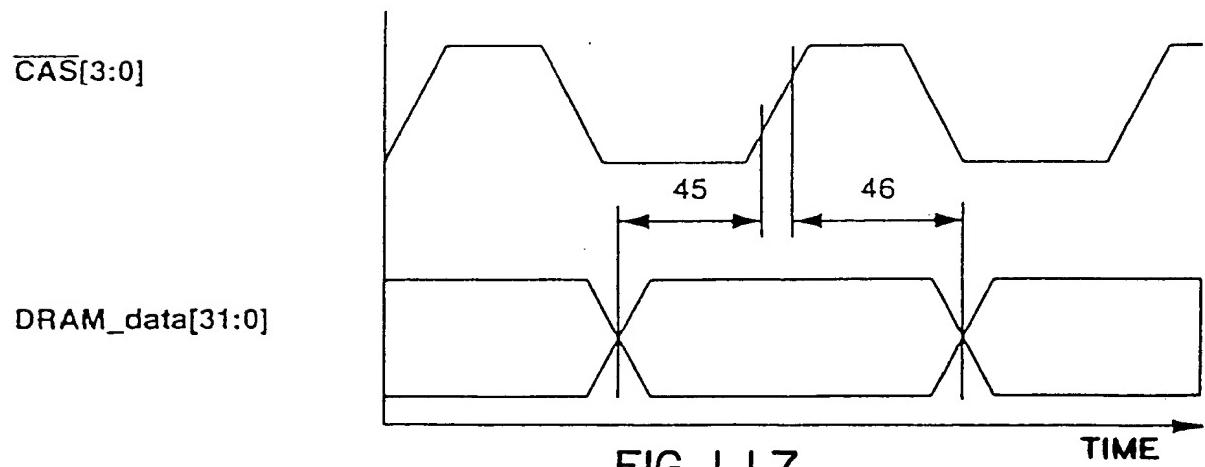


FIG.117

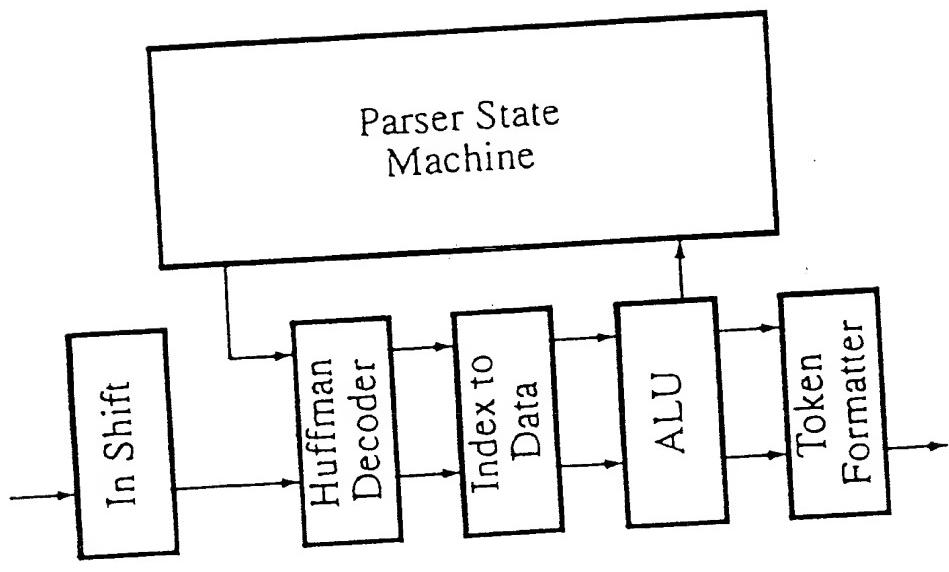


FIG.118

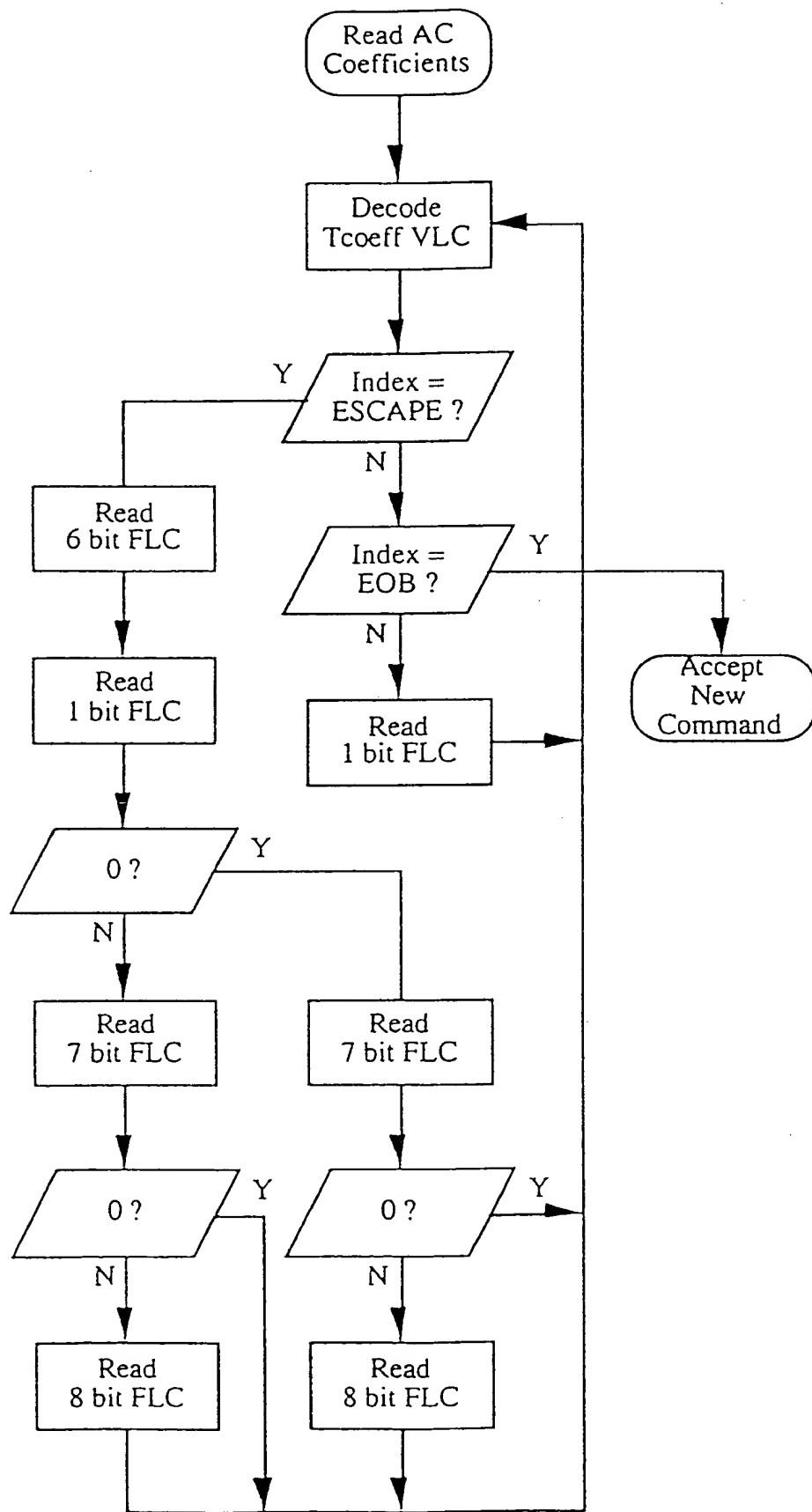


FIG. 119

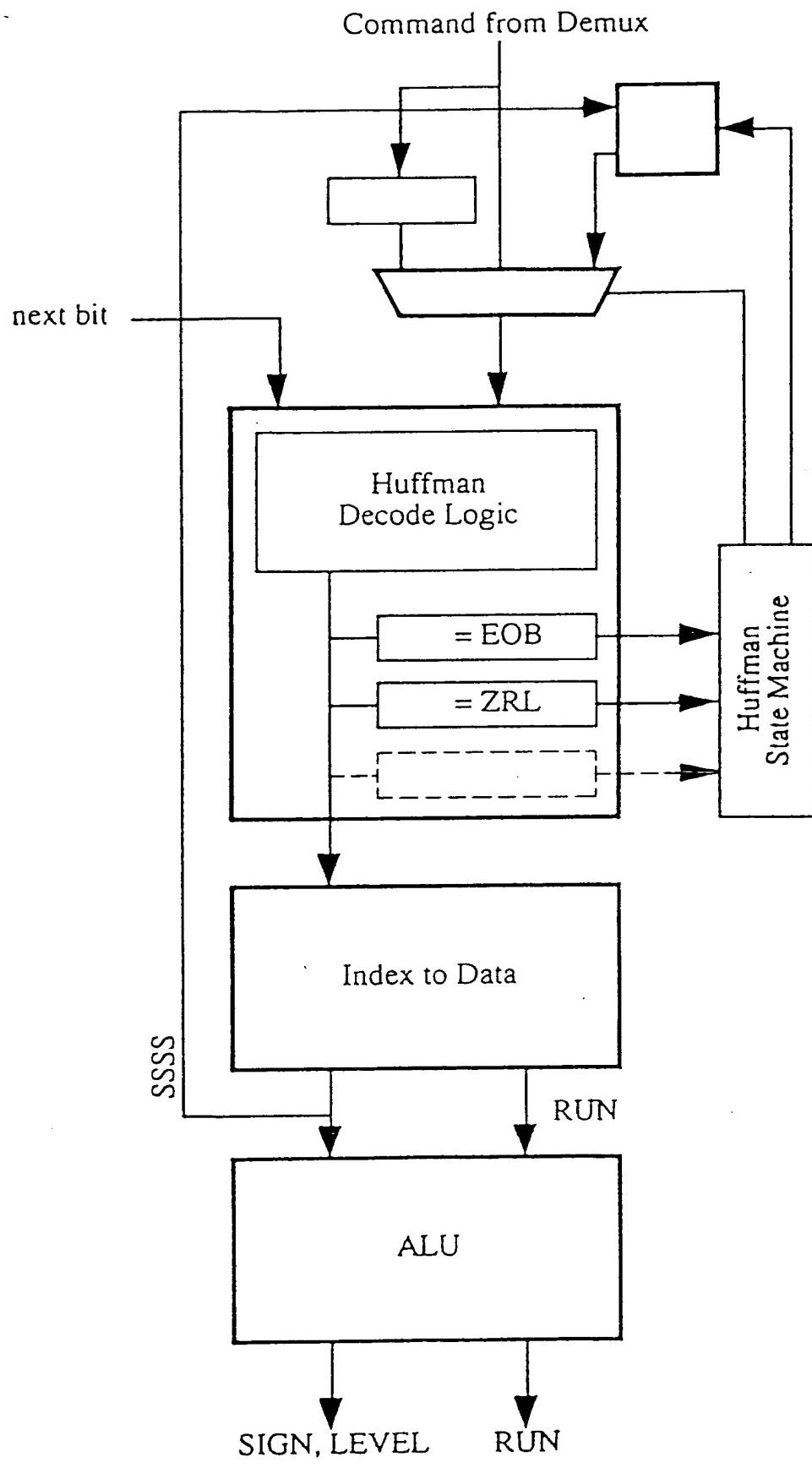


FIG. I 20

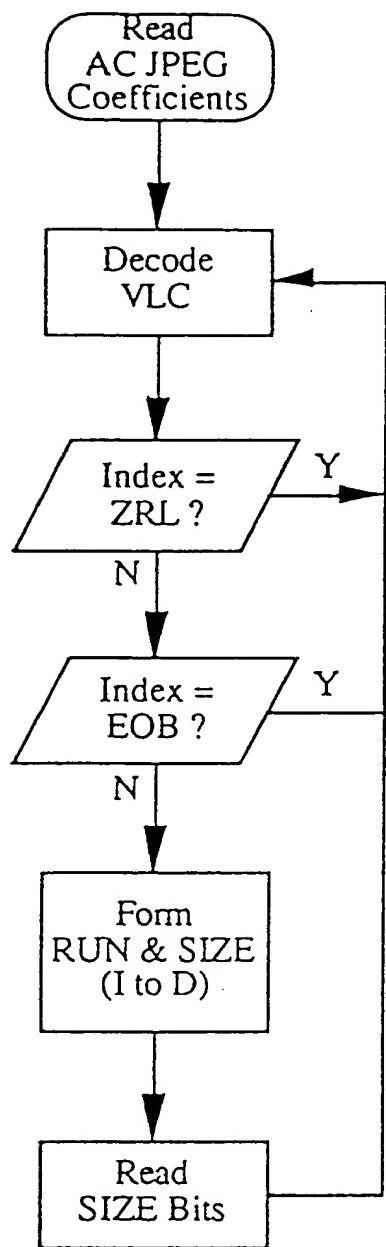


FIG.121A

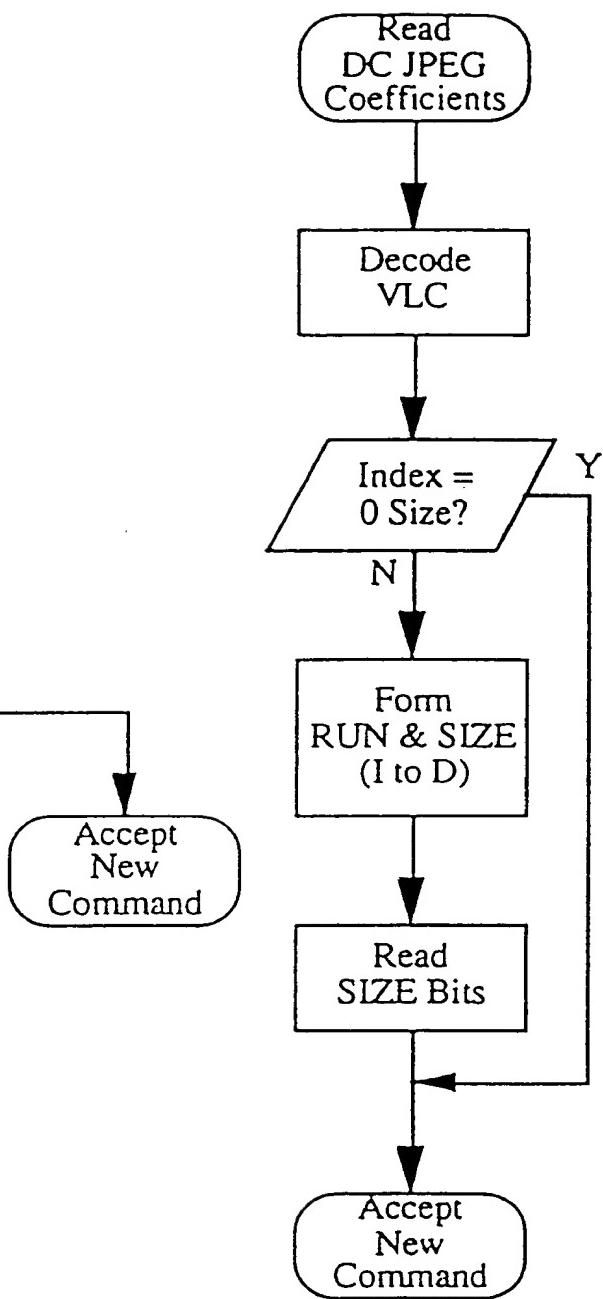


FIG.121B

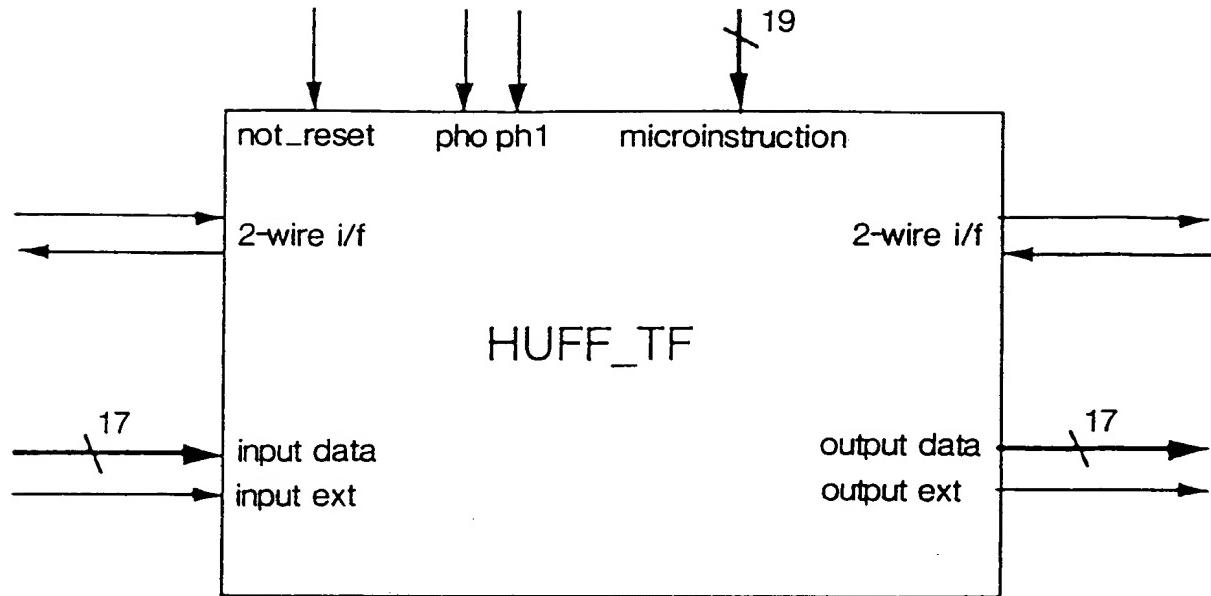


FIG.122

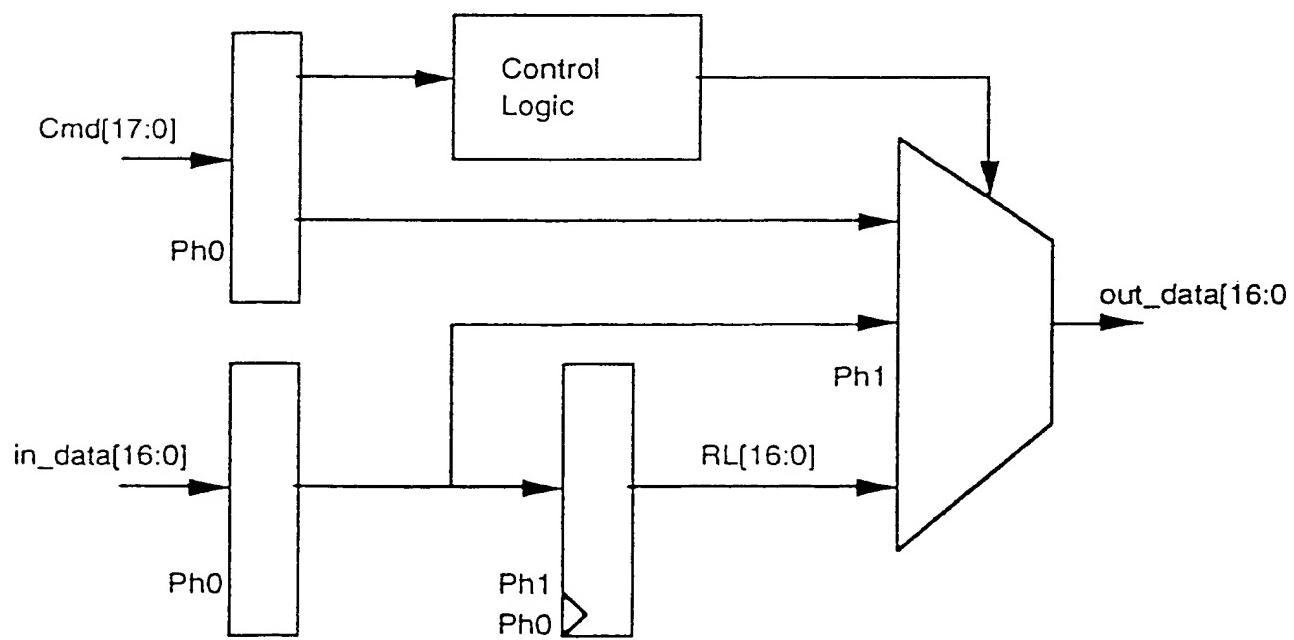


FIG.123

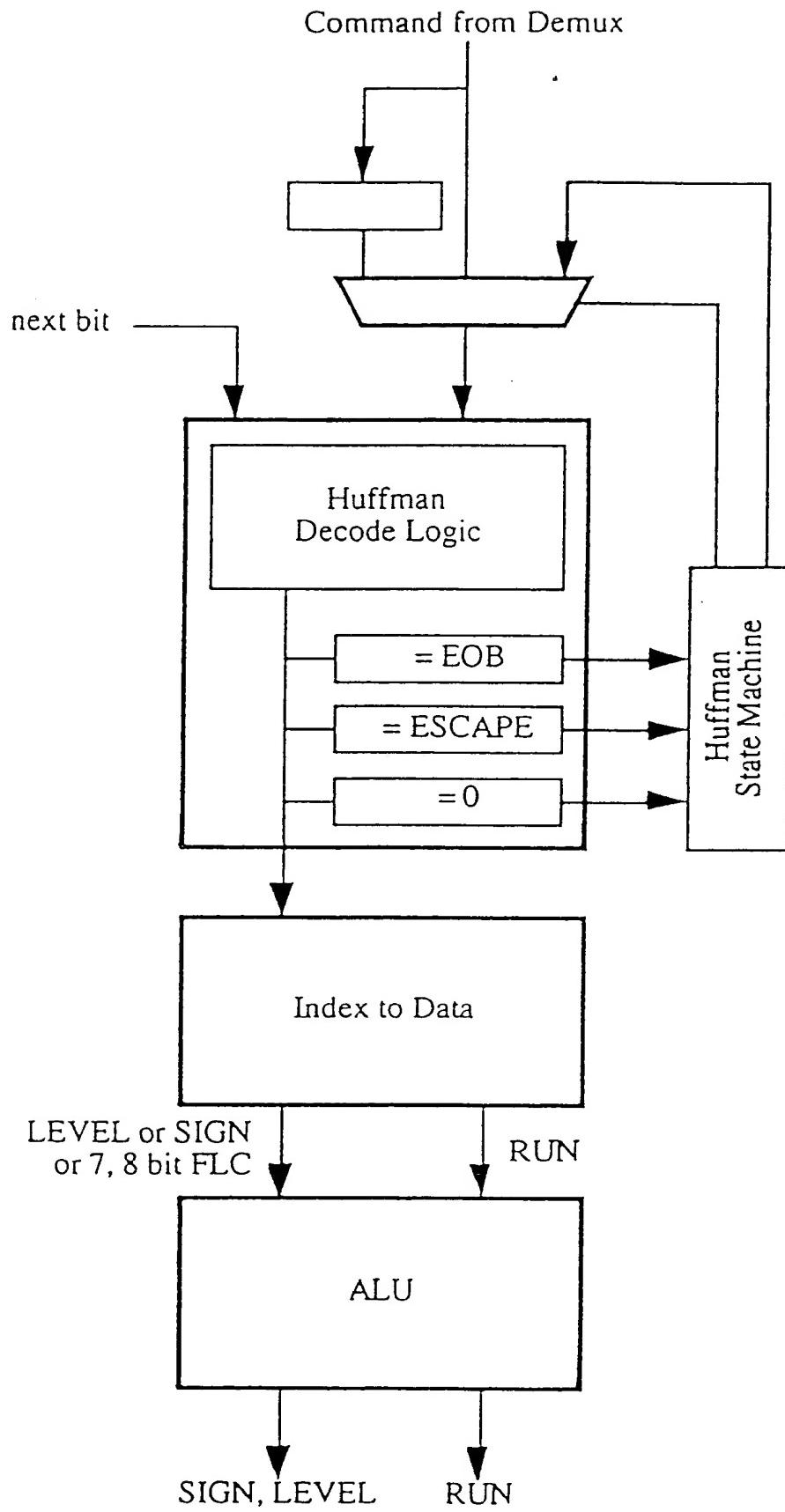


FIG. 124

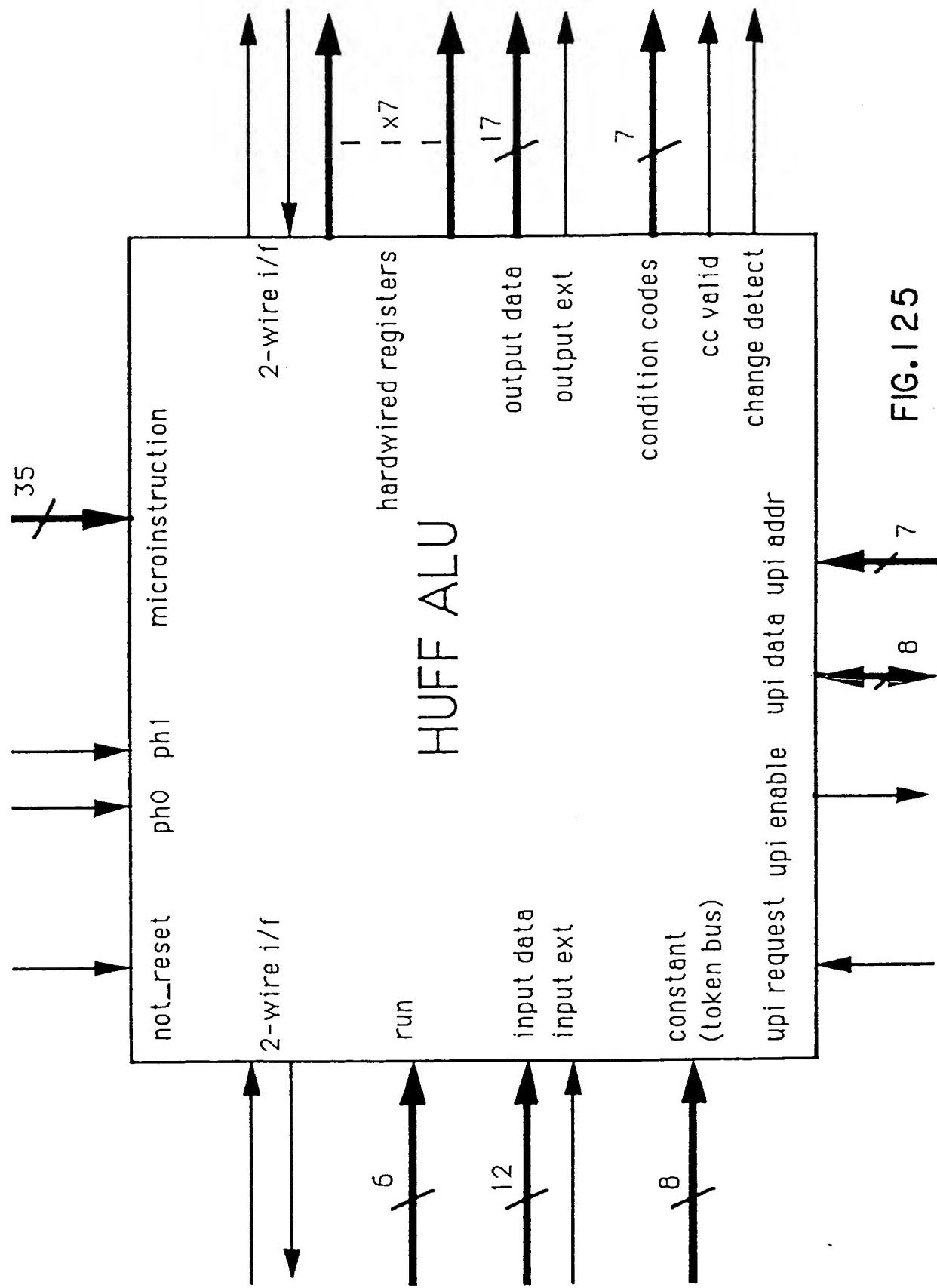


FIG. I 25

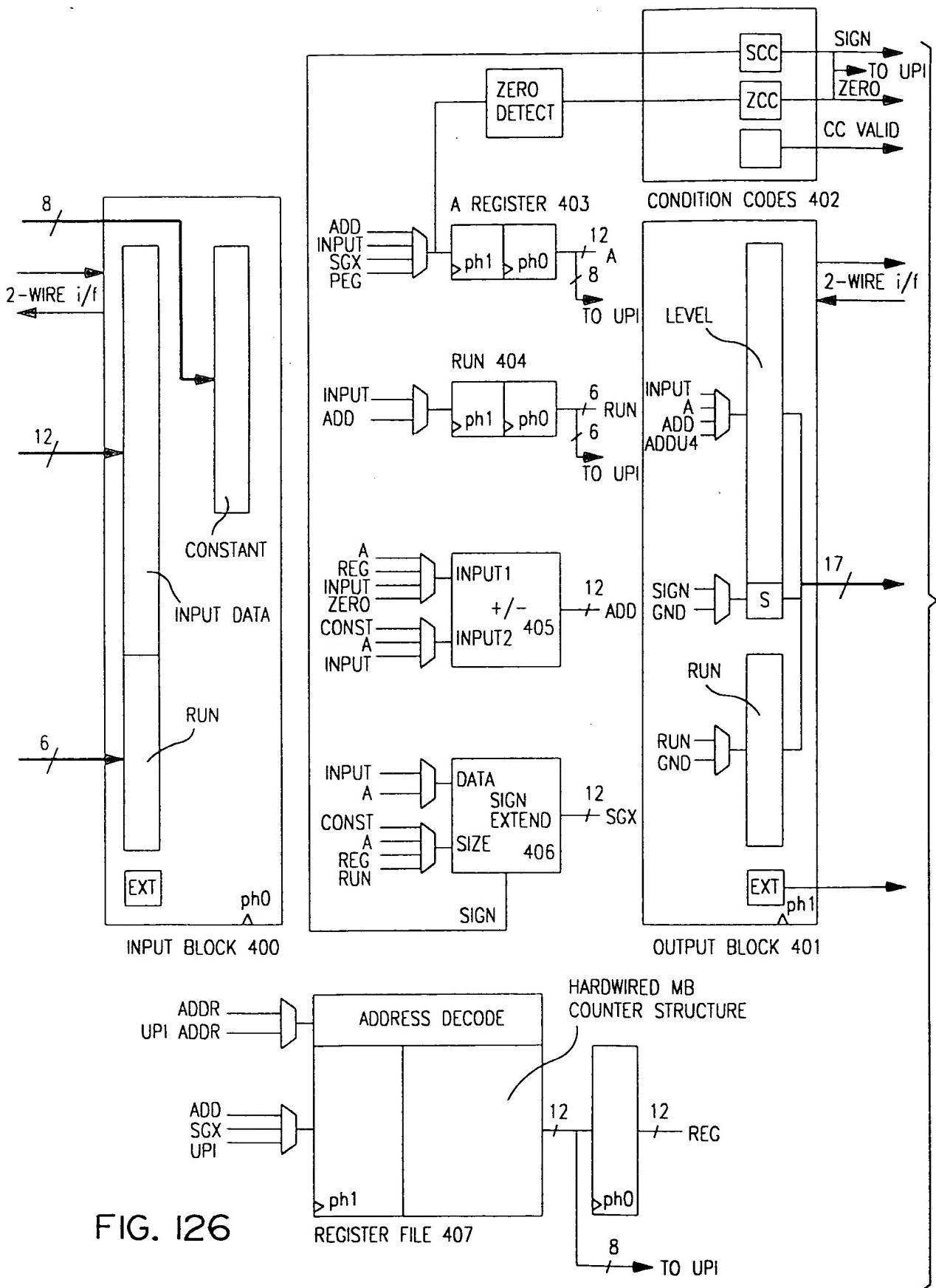


FIG. I26

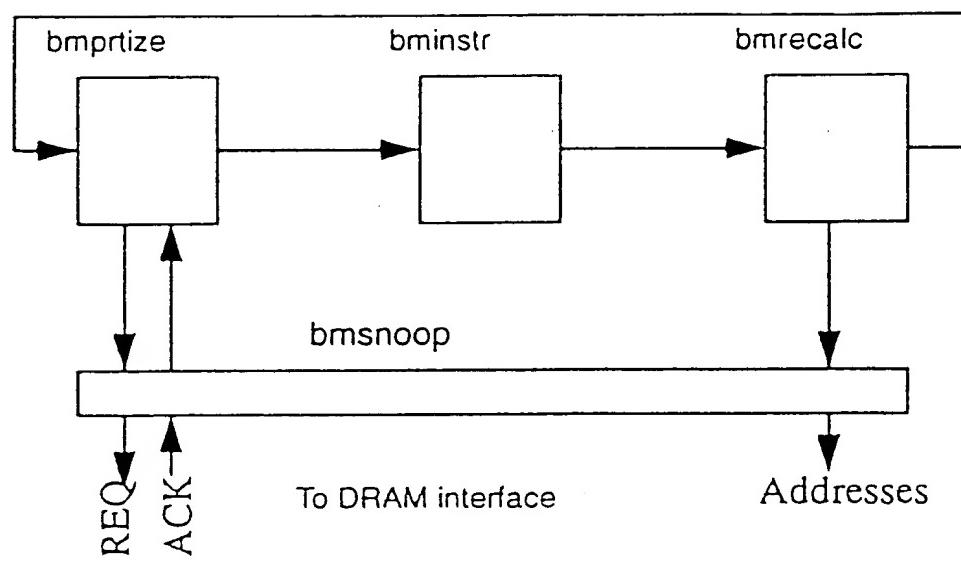


FIG. 127

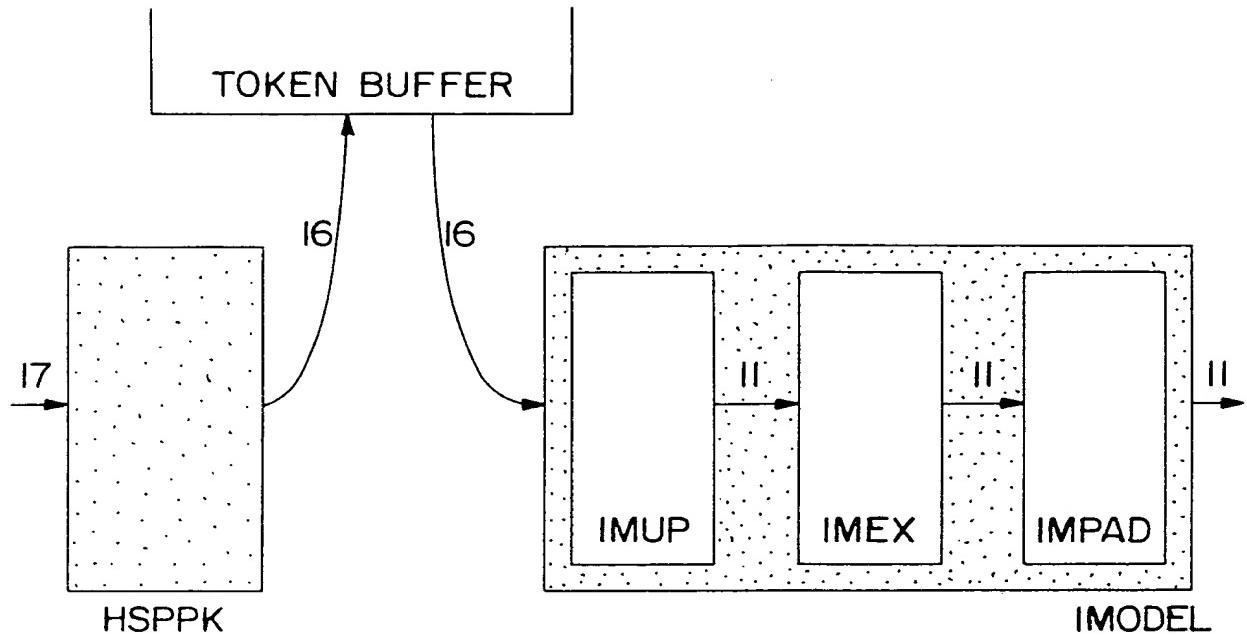


FIG. I 28

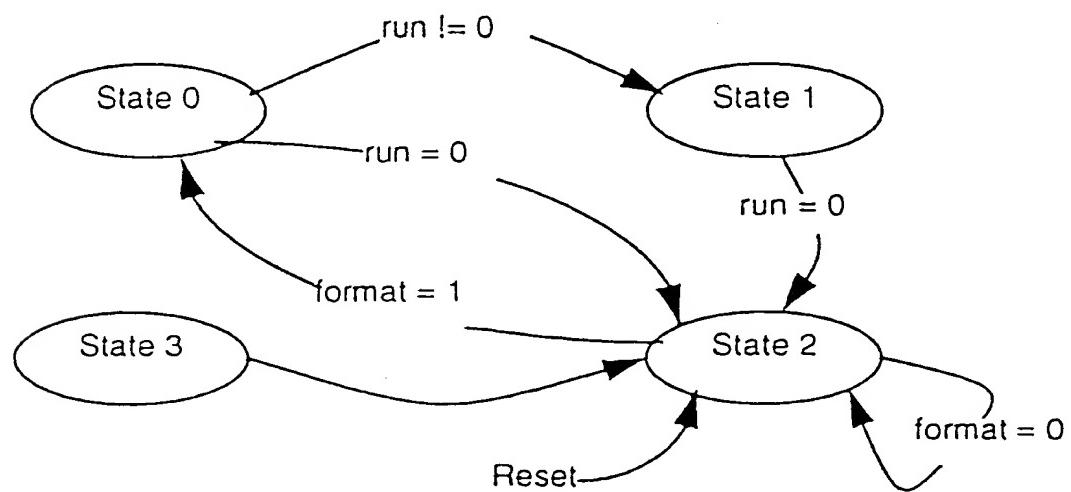


FIG. I 29

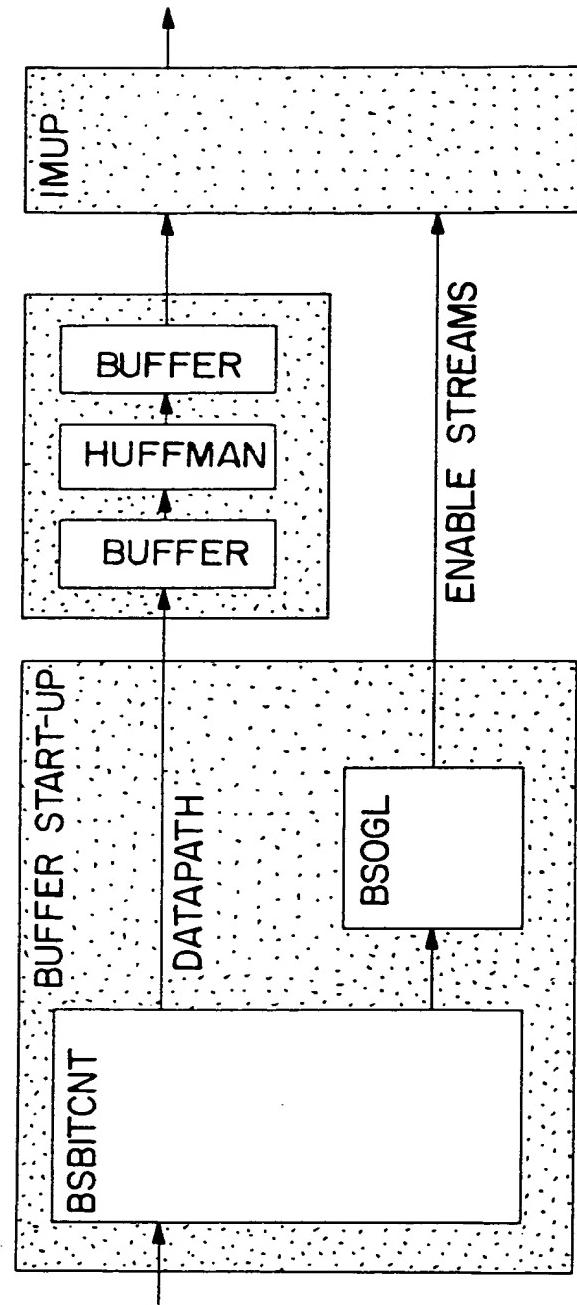


FIG. I 30

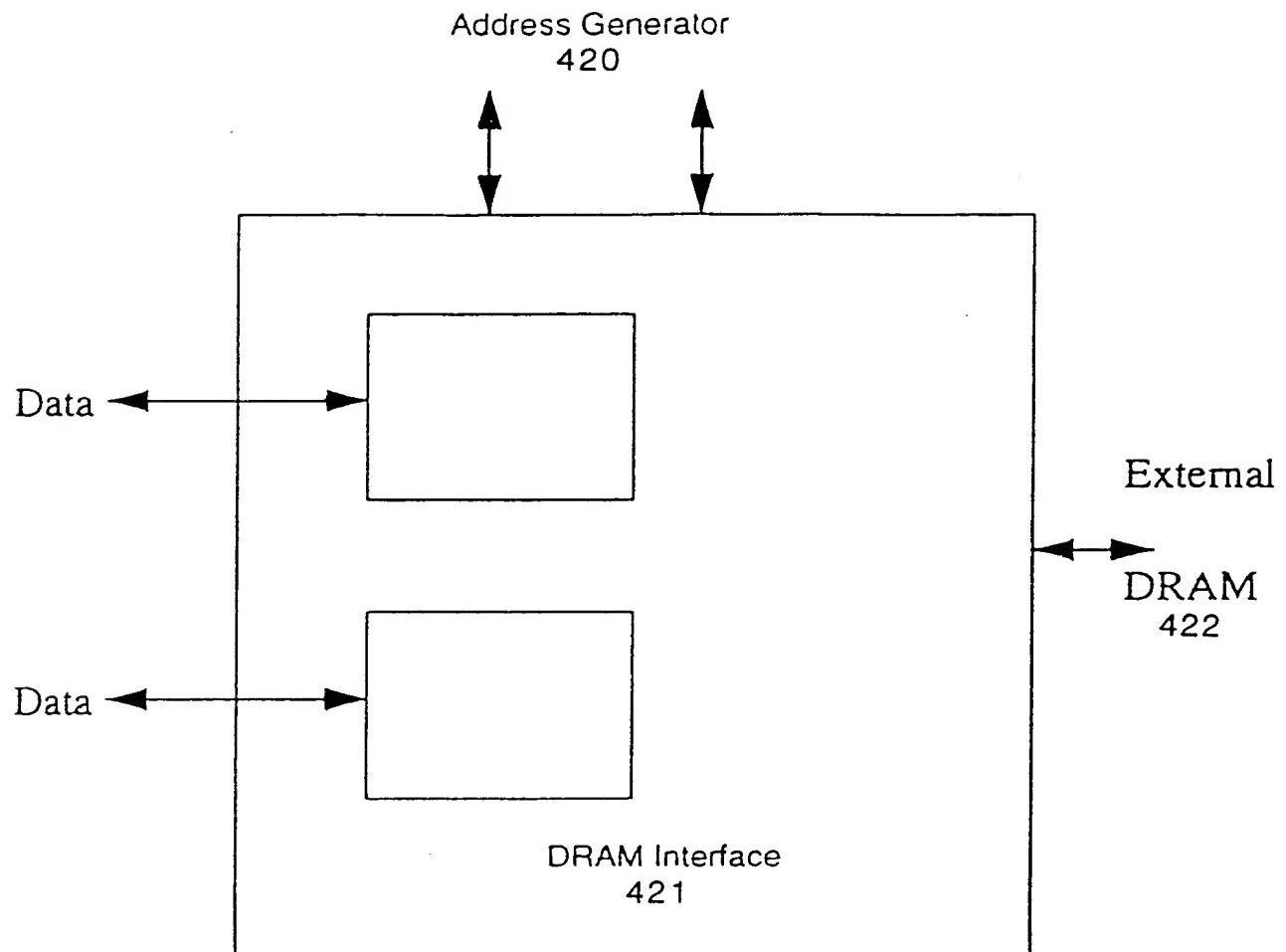


FIG. I 3 I

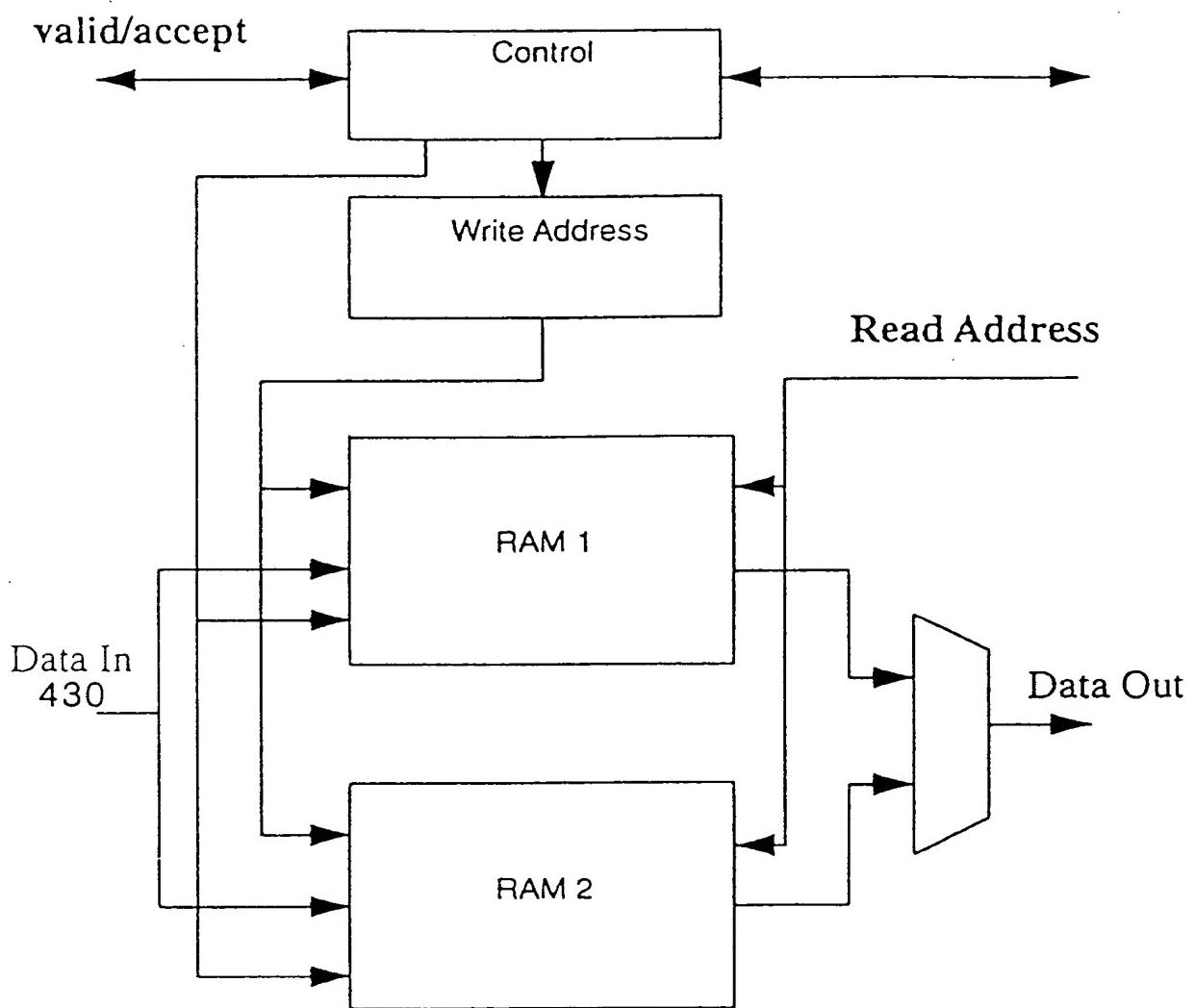


FIG.132

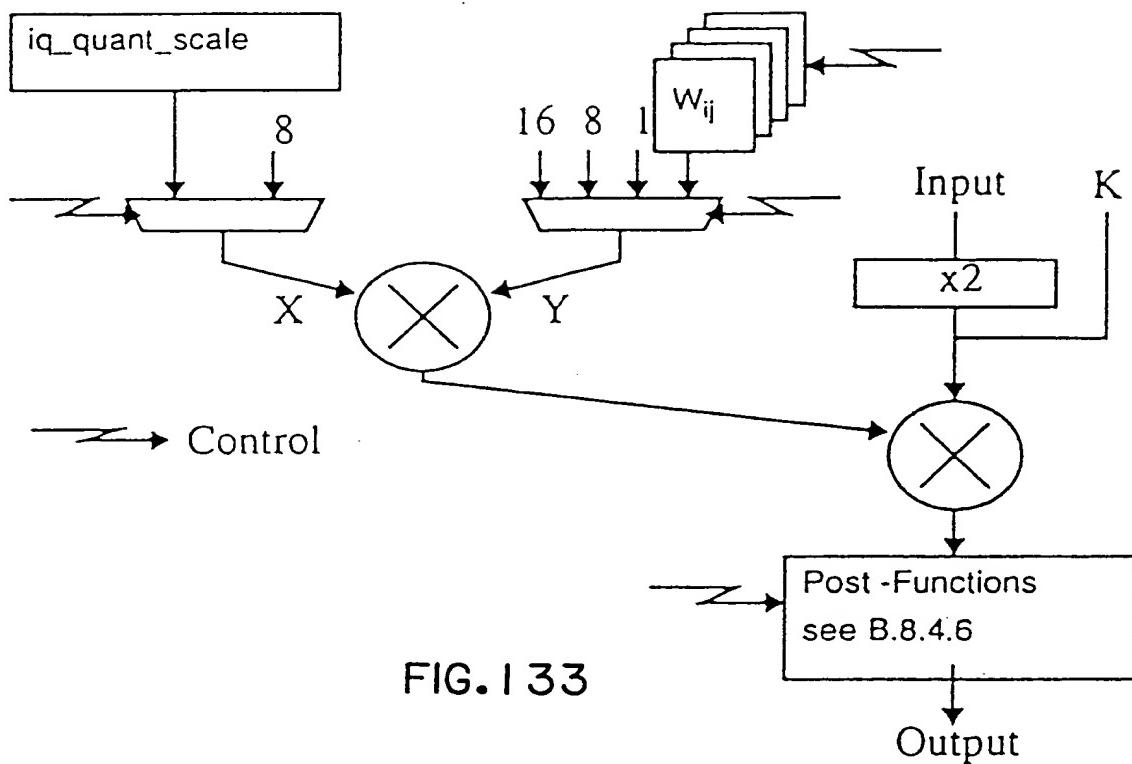


FIG.133

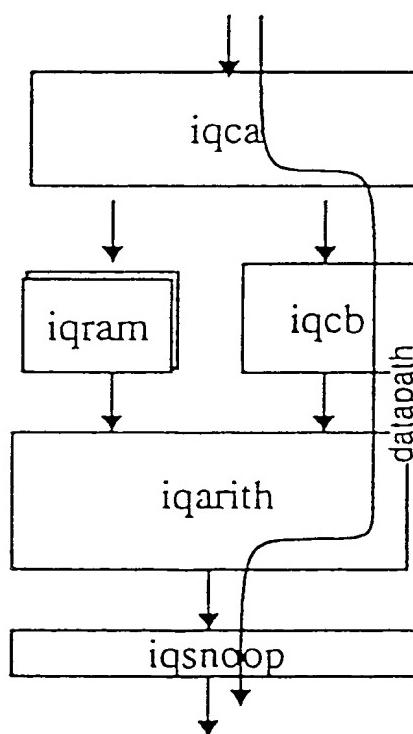


FIG.134

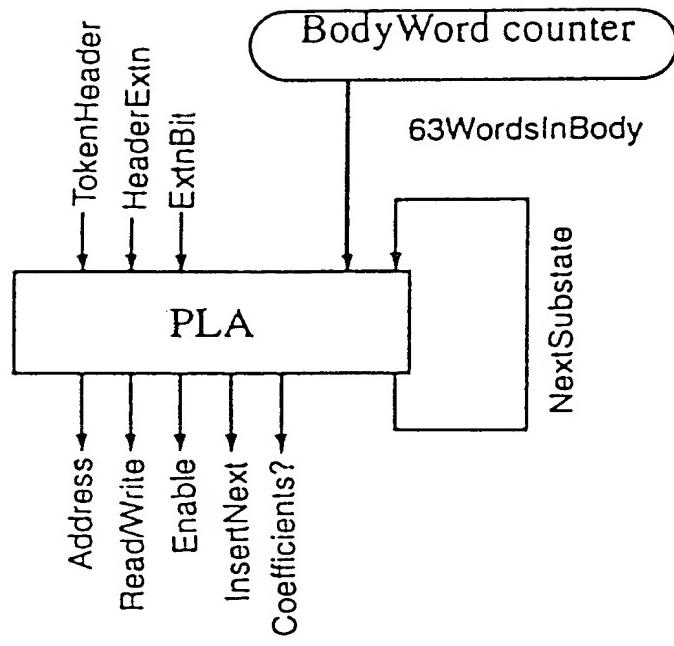
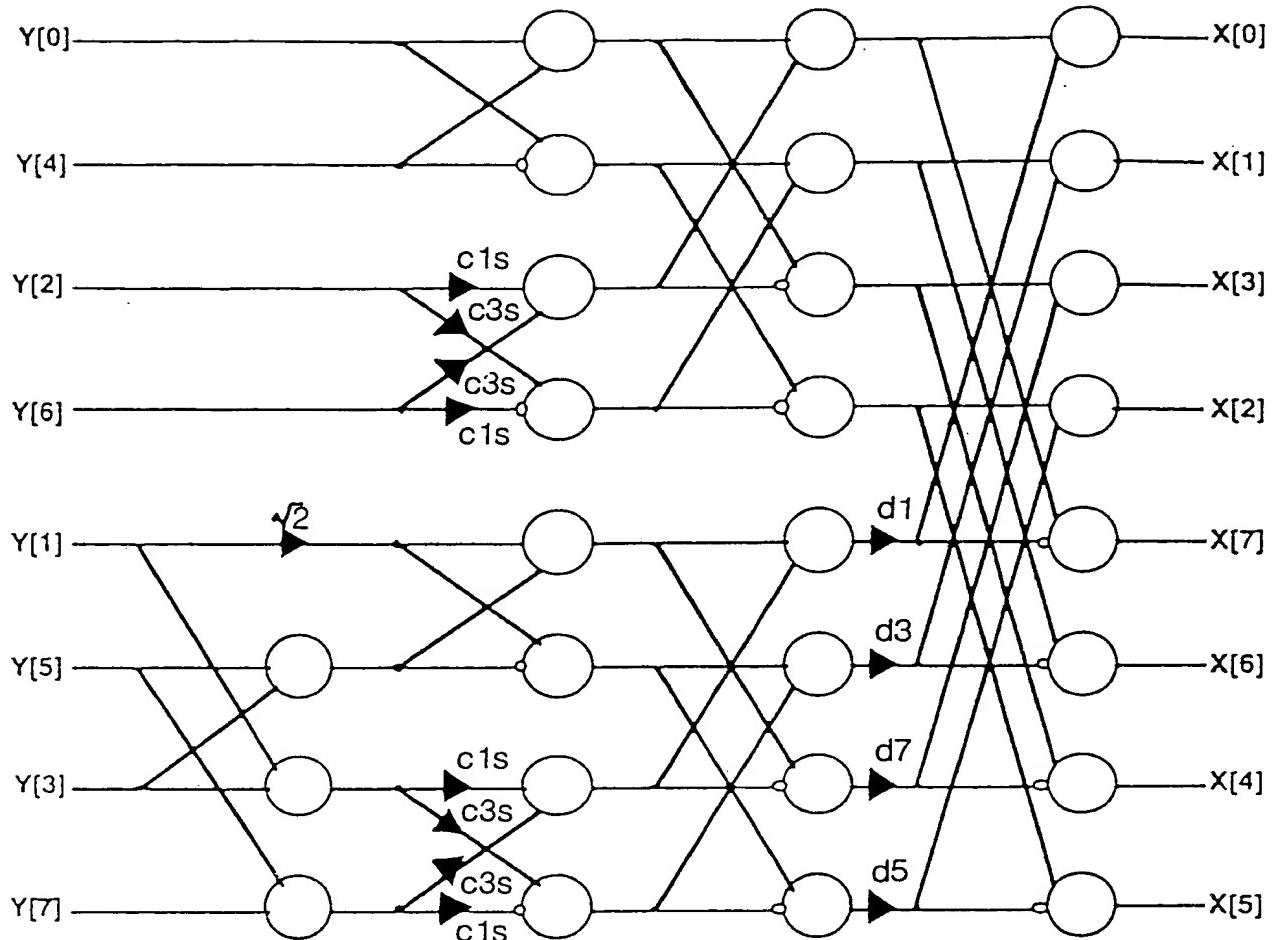
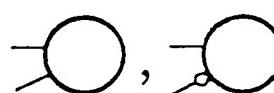


FIG.135



Key:-

→ <sup>coef</sup> constant coefficient  
multiplier



adder,subtractor

FIG.136

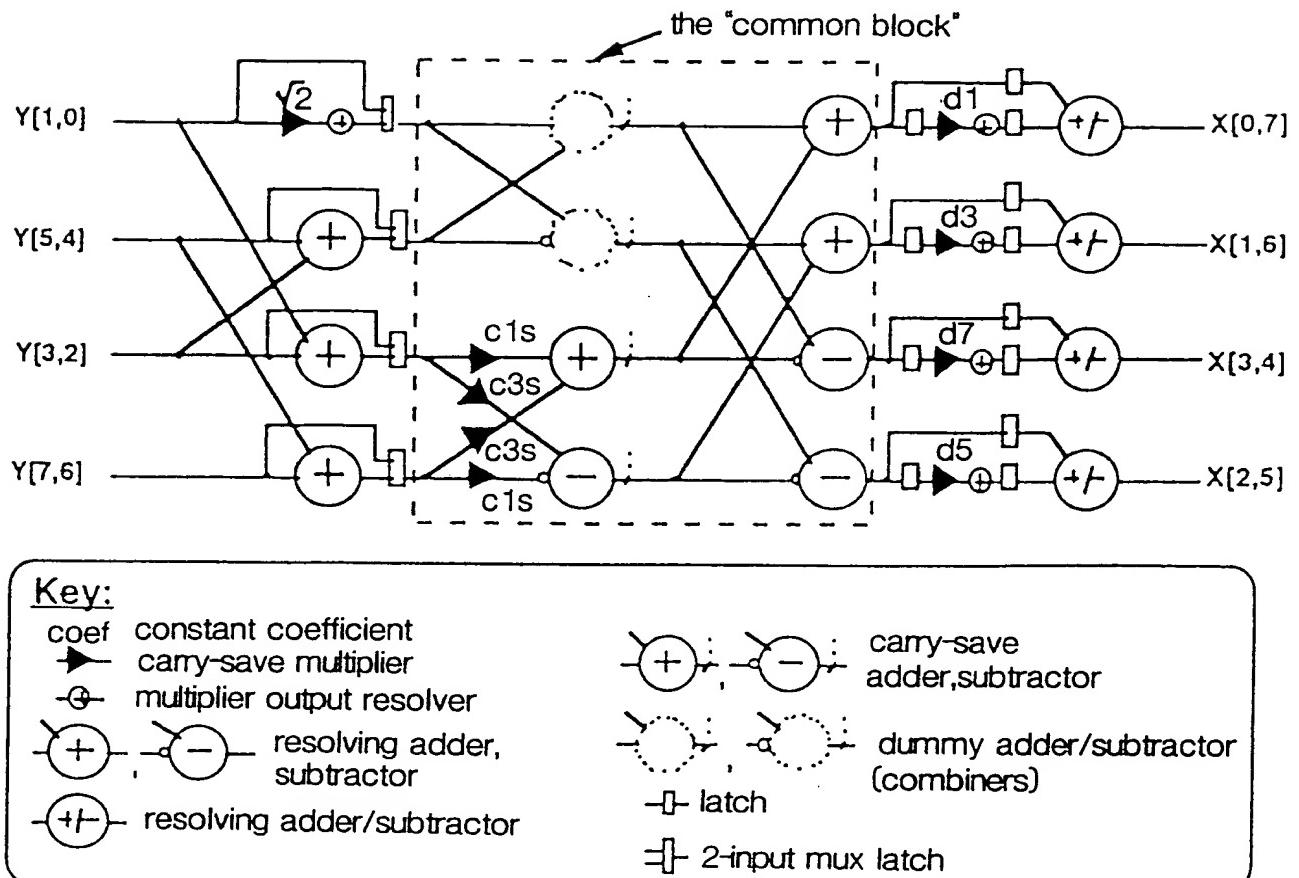


FIG. 137

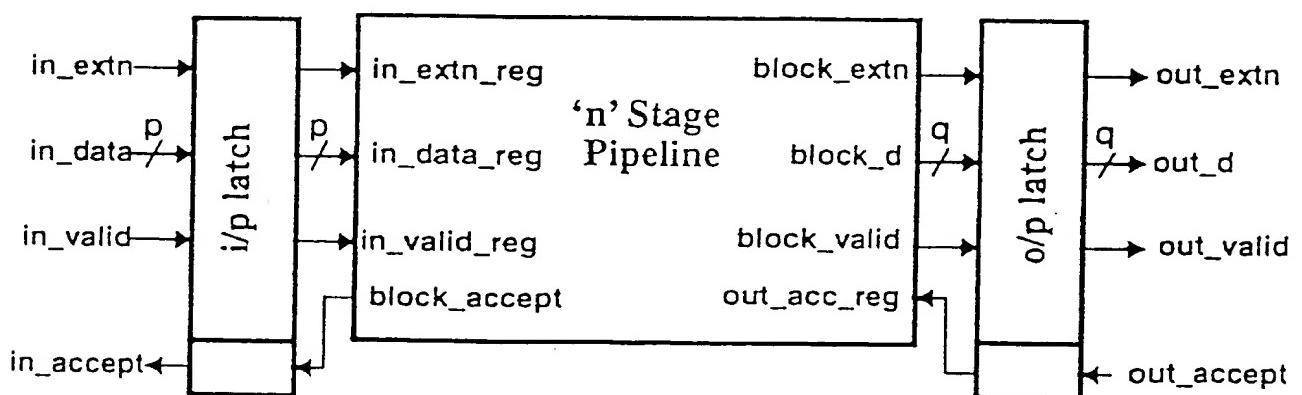


FIG. 138

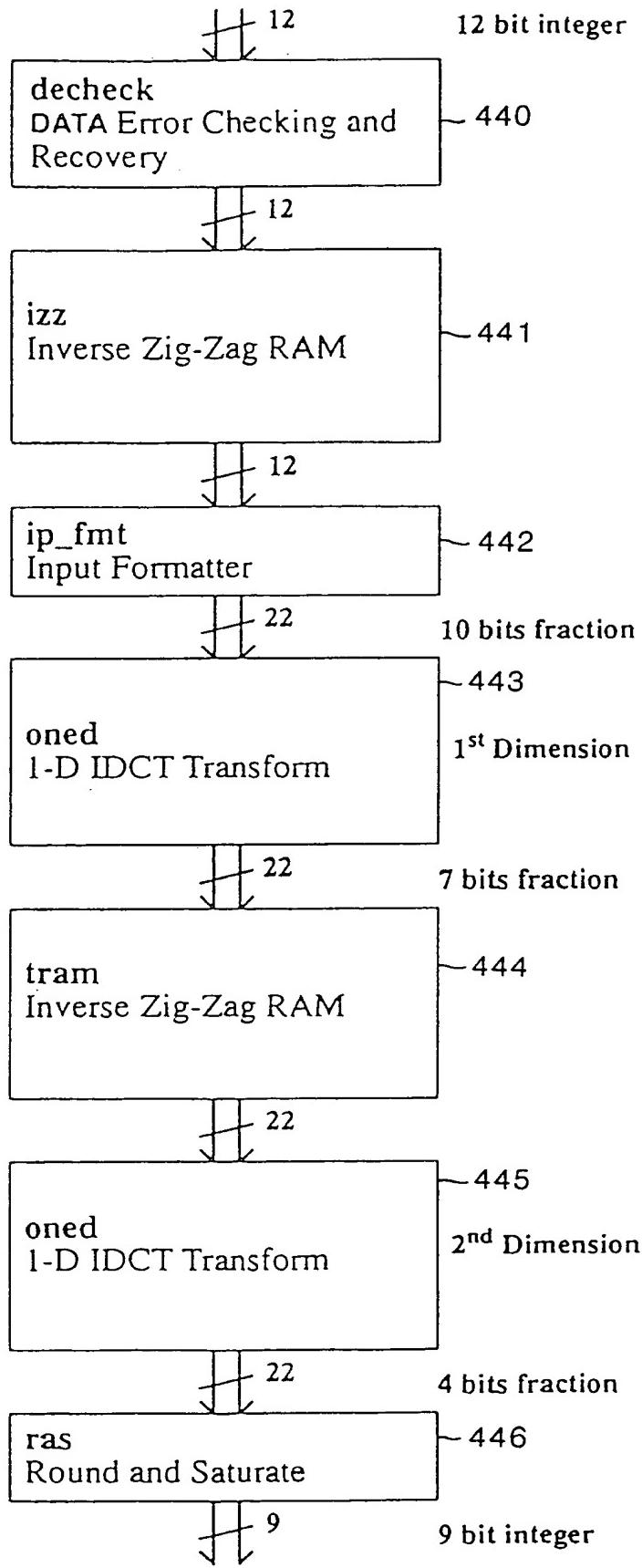
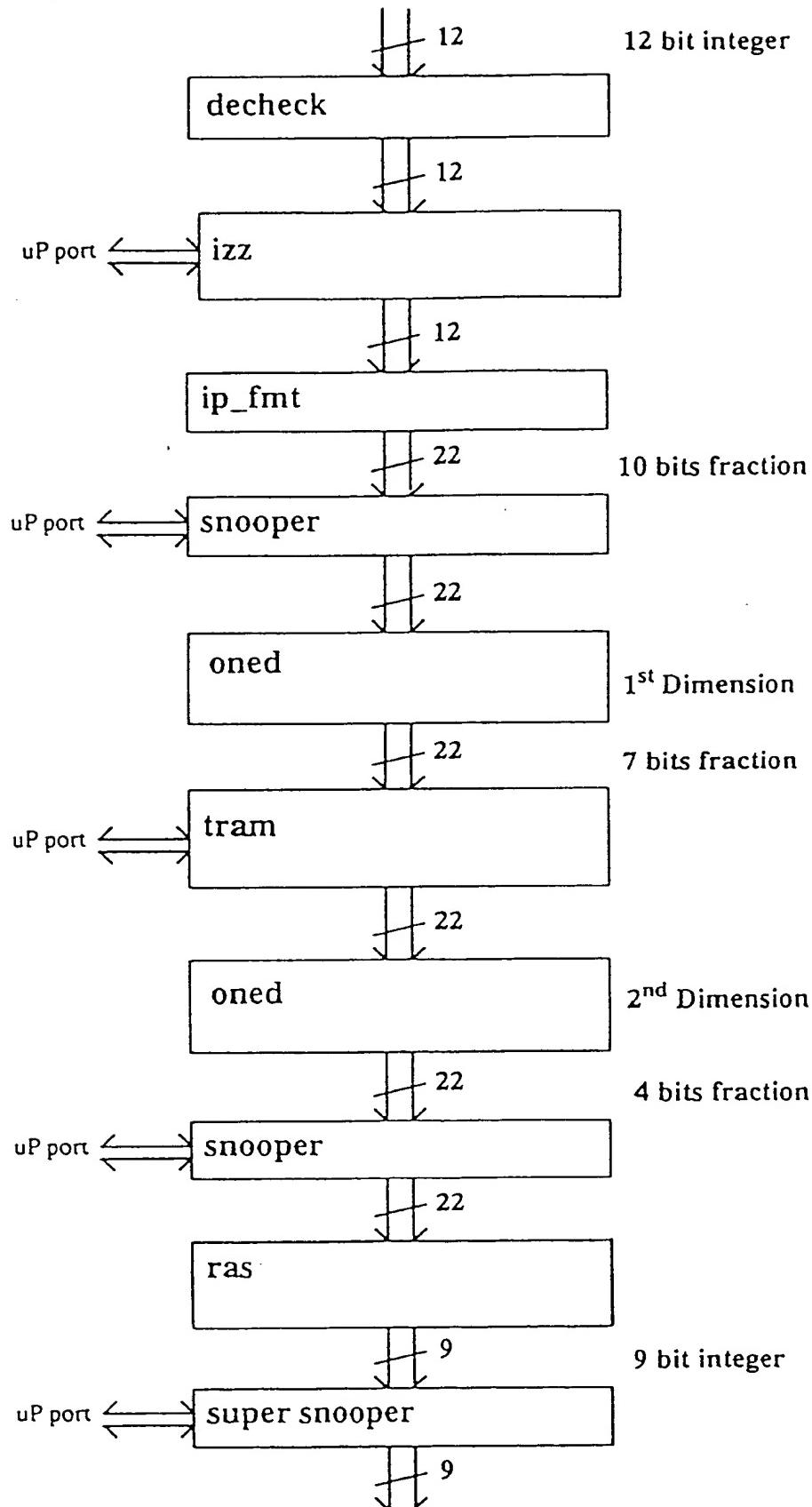
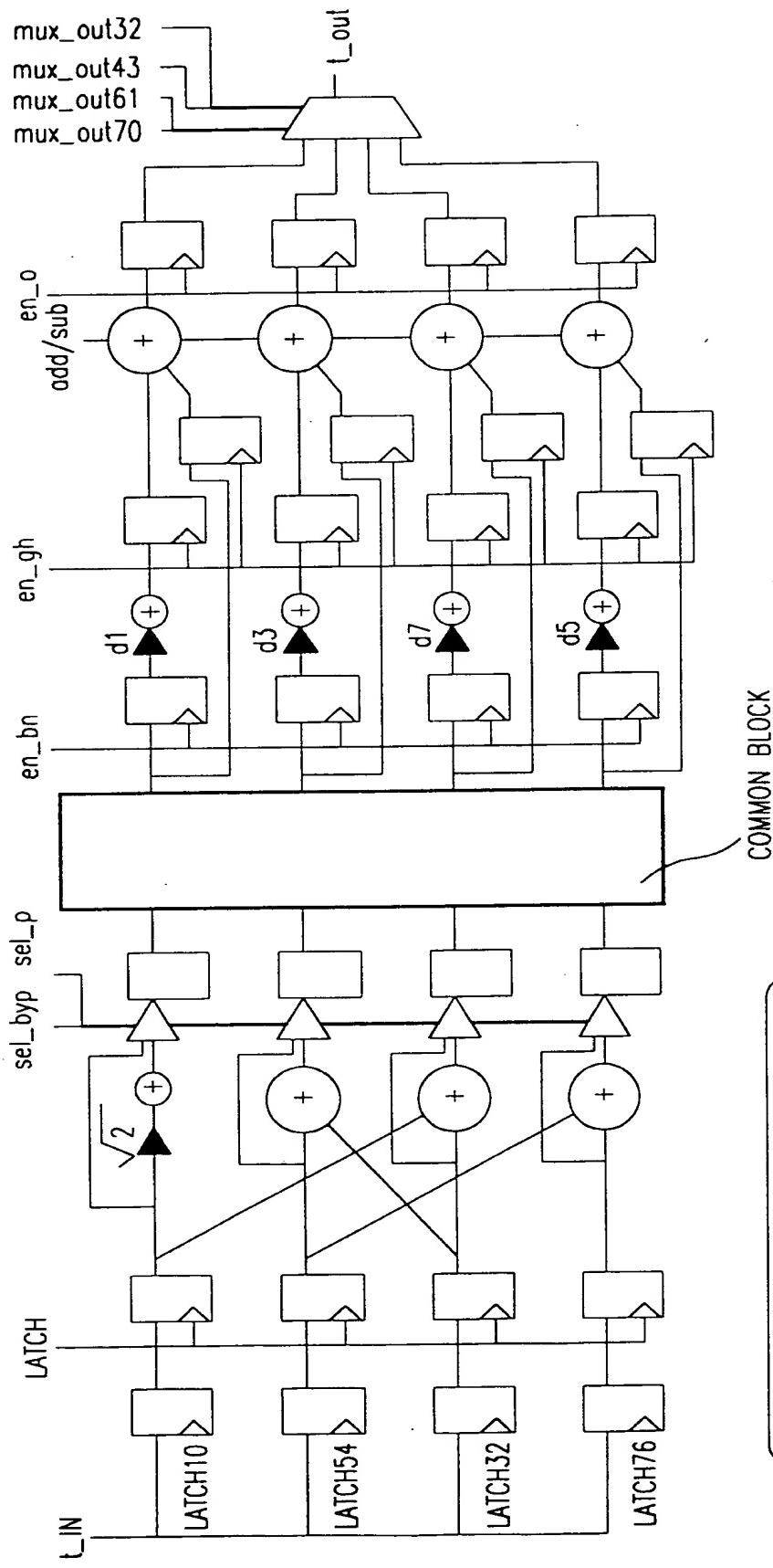


FIG. I 39

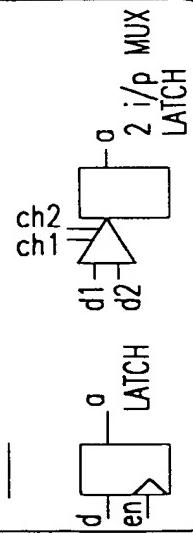


**FIG. I 40**

FIG. 141



KEY:



NOTE: "COMMON BLOCK" IS ENTIRELY  
COMBINATIONAL (NO LATCHING)

FIG. 141

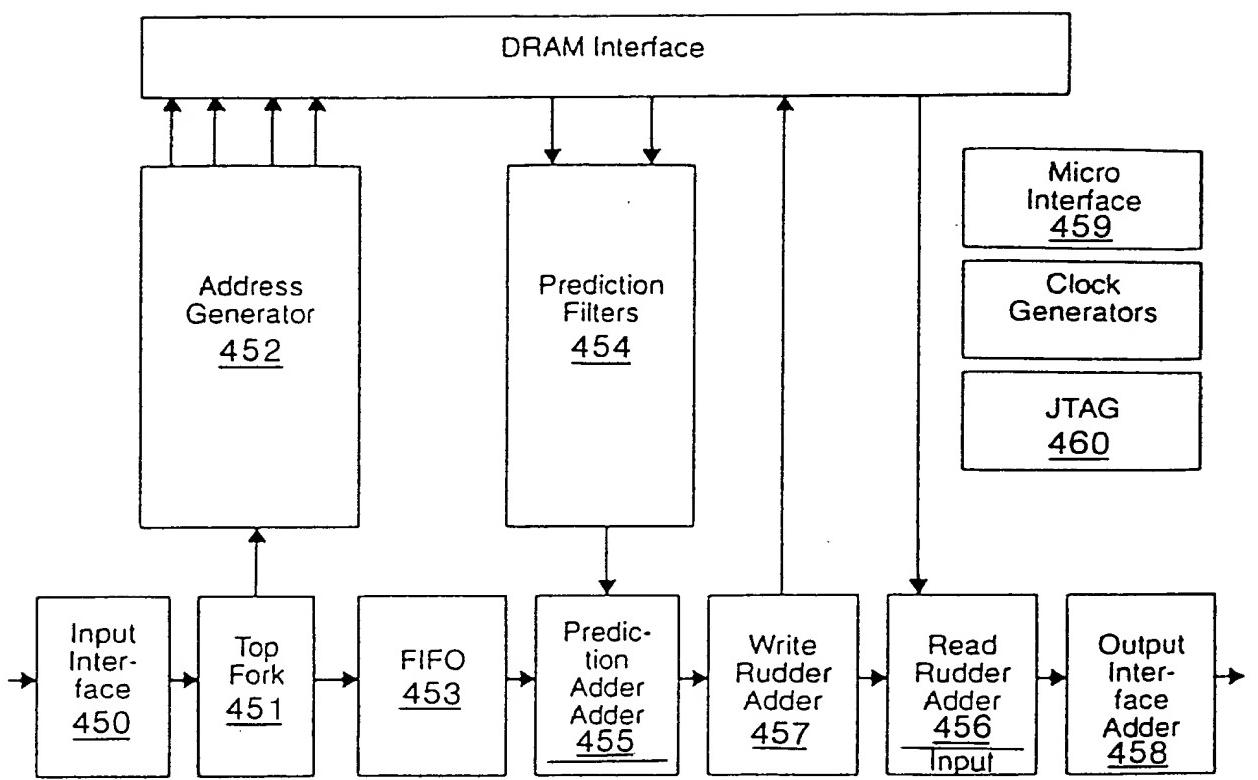


FIG. I 42

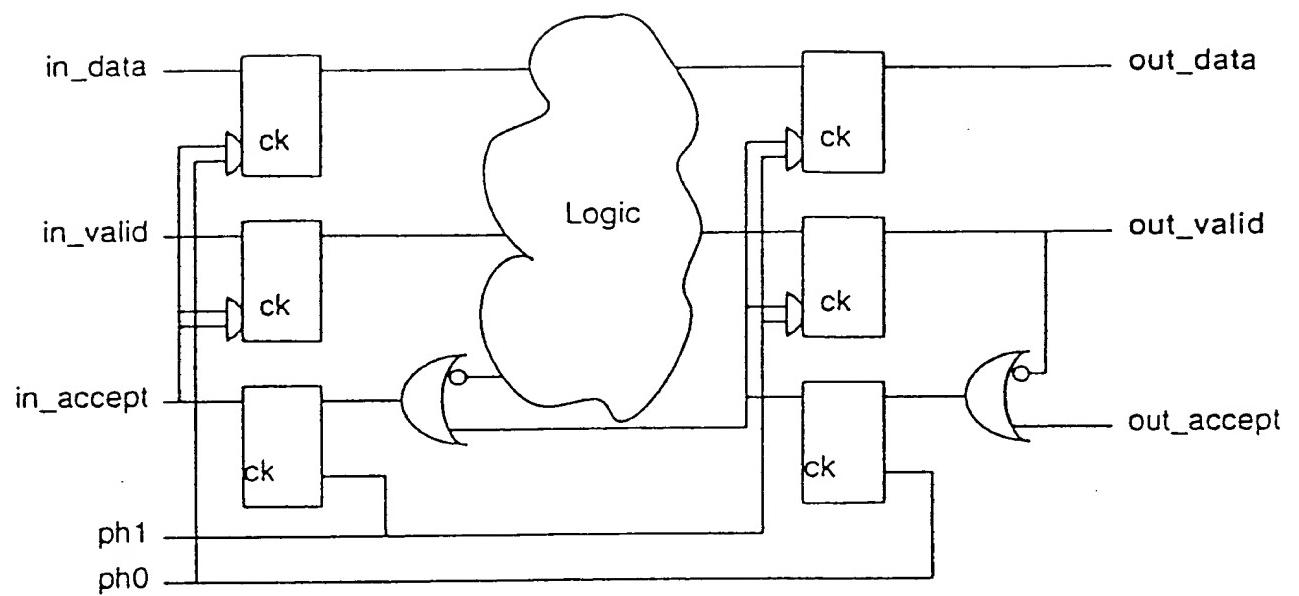


FIG. 143

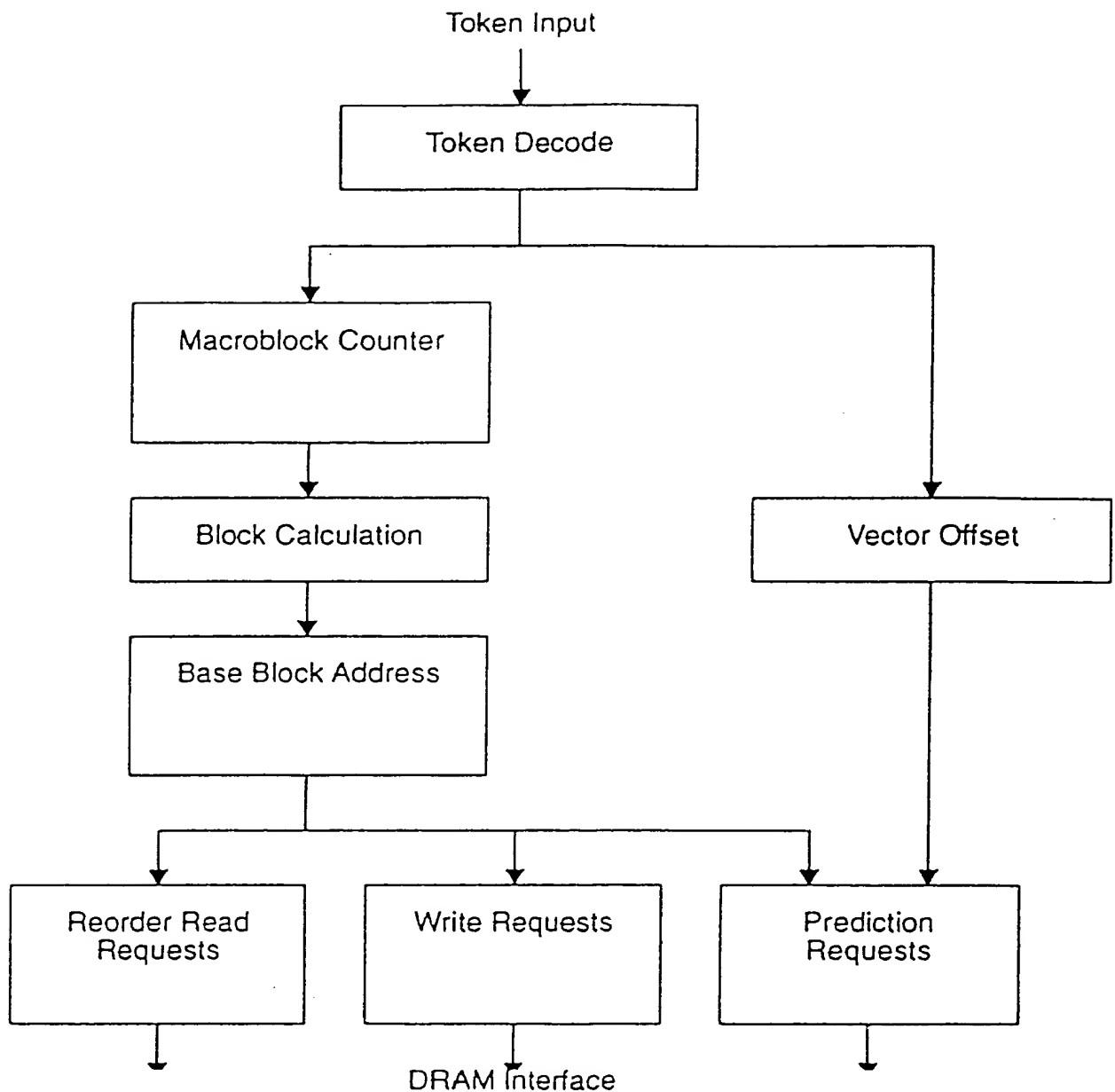


FIG.144

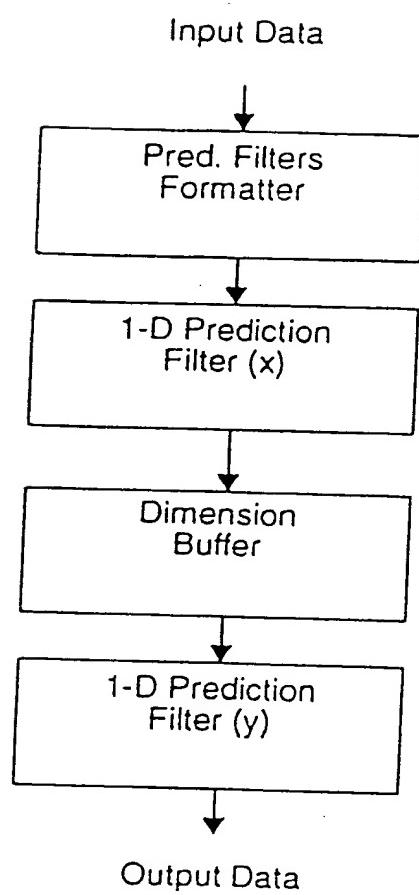
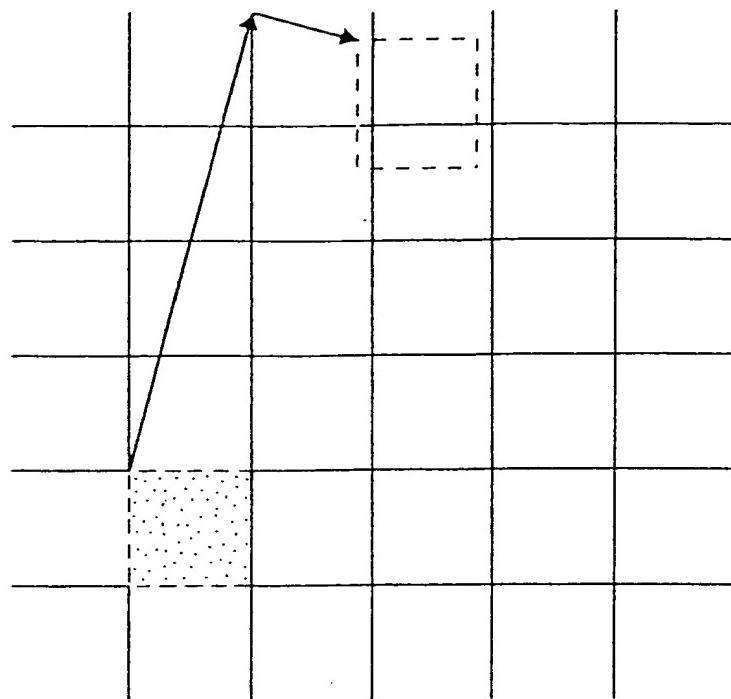
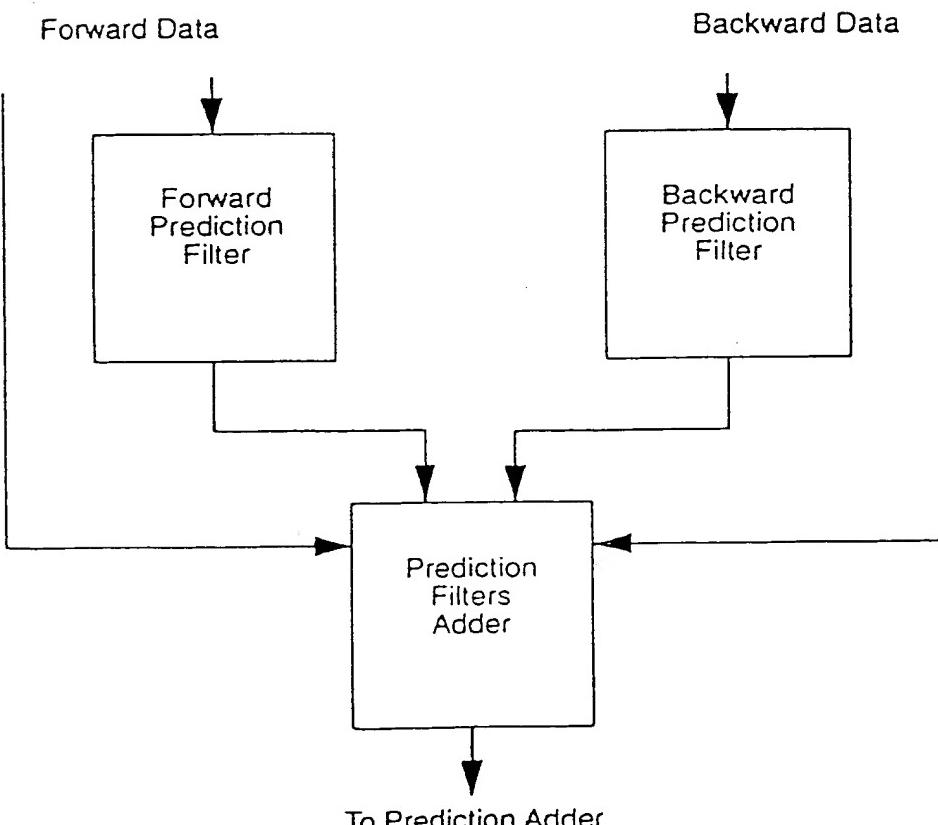


FIG. 147



**FIG. 145**



**FIG. 146**

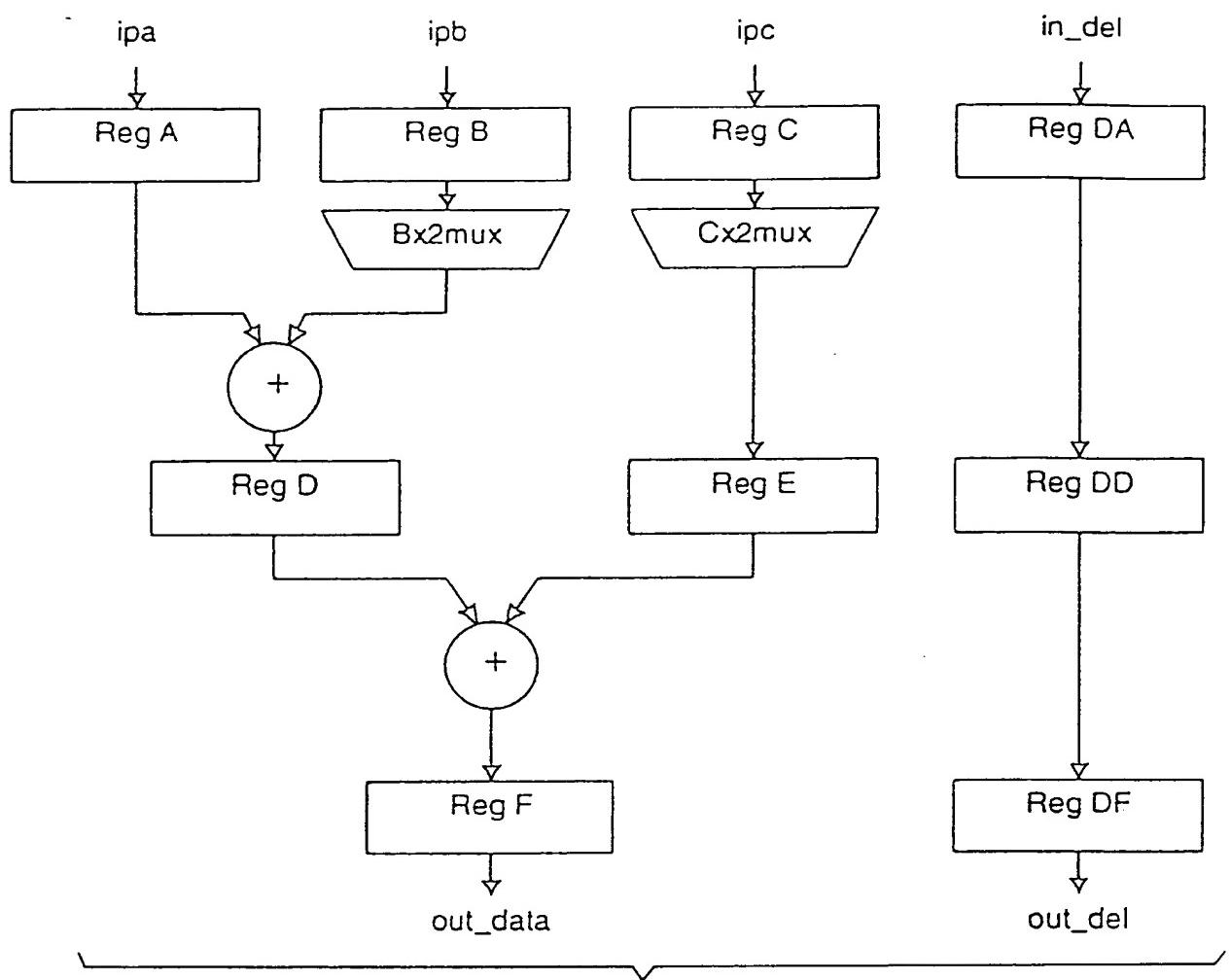


FIG. 148

0	1	2	3	4	5	6	7
8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23
24	25	26	27	28	29	30	31
32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47
48	49	50	51	52	53	54	55
56	57	58	59	60	61	62	63

FIG. 149

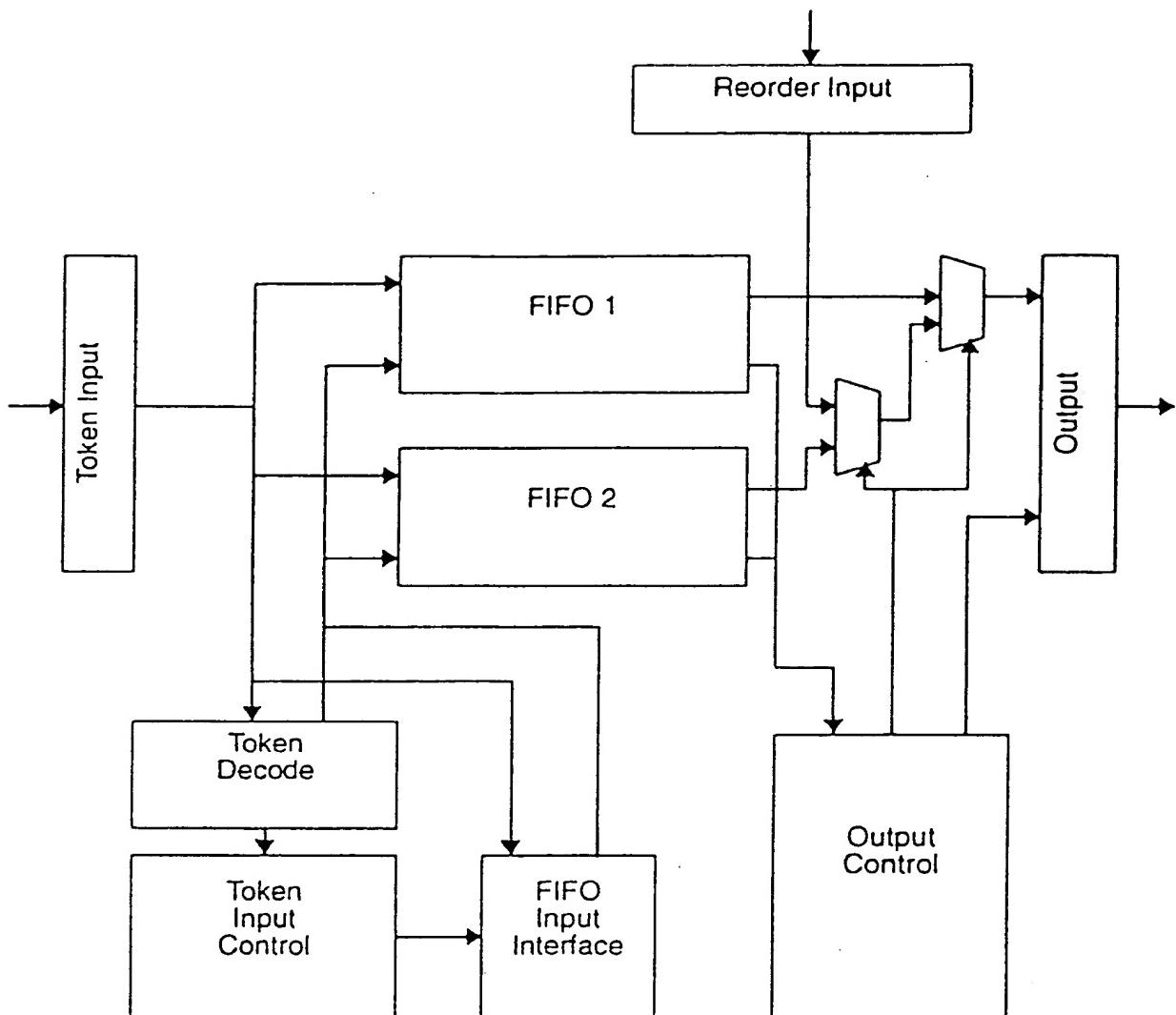


FIG. 150

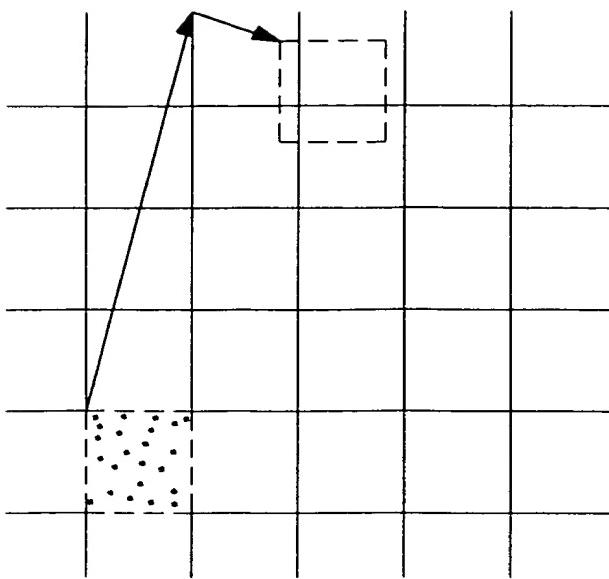


FIG. 151

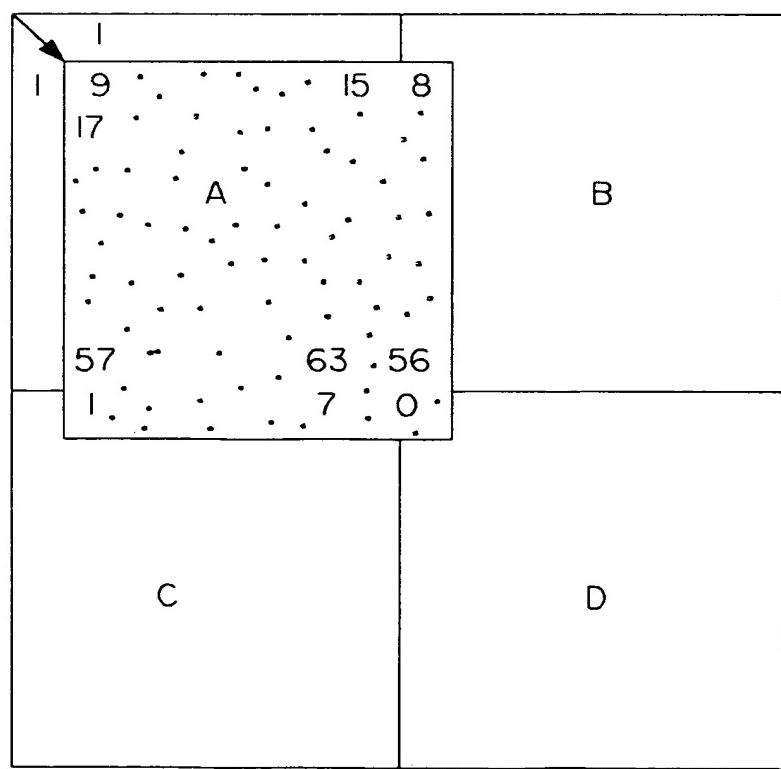


FIG. 152

## Read Cycle

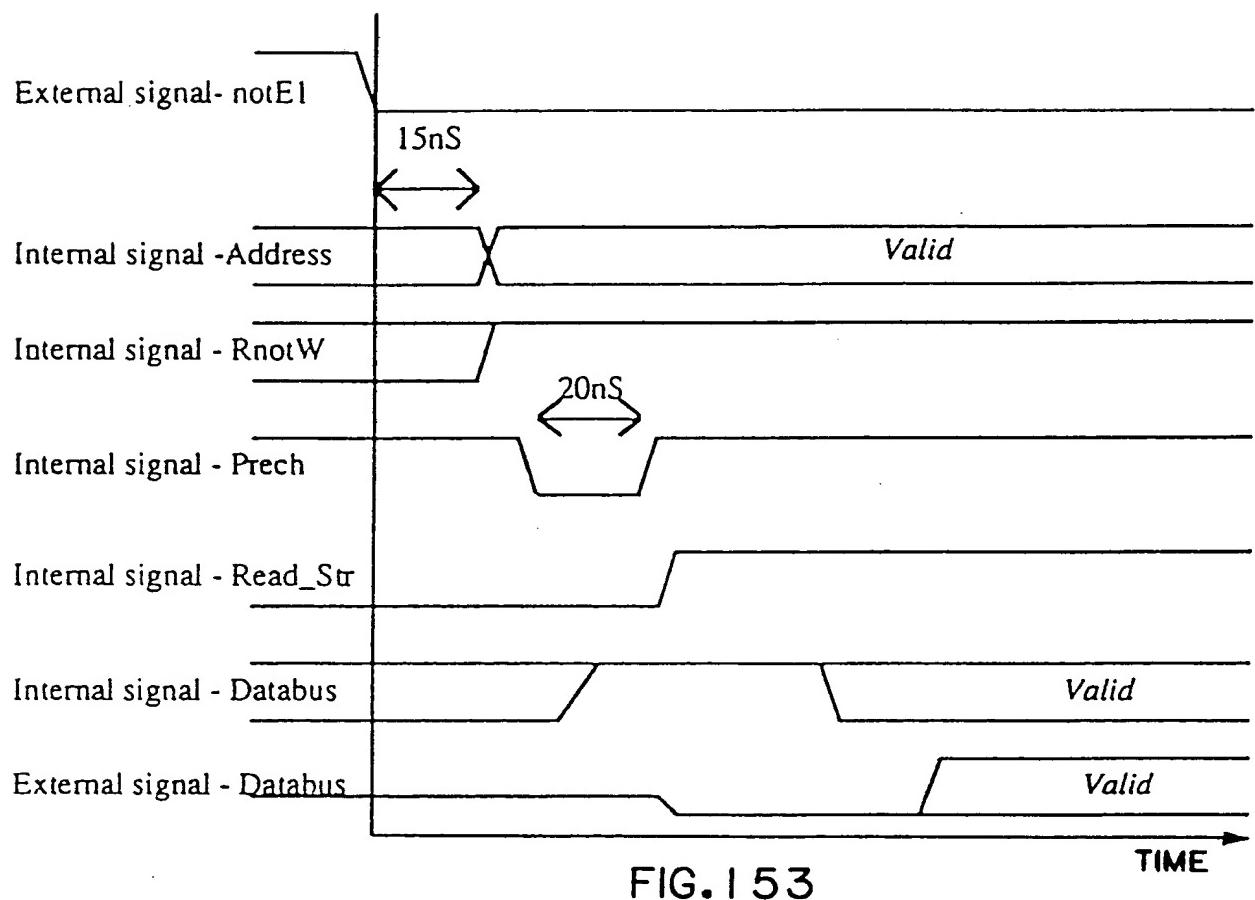


FIG. 153

## Write Cycle

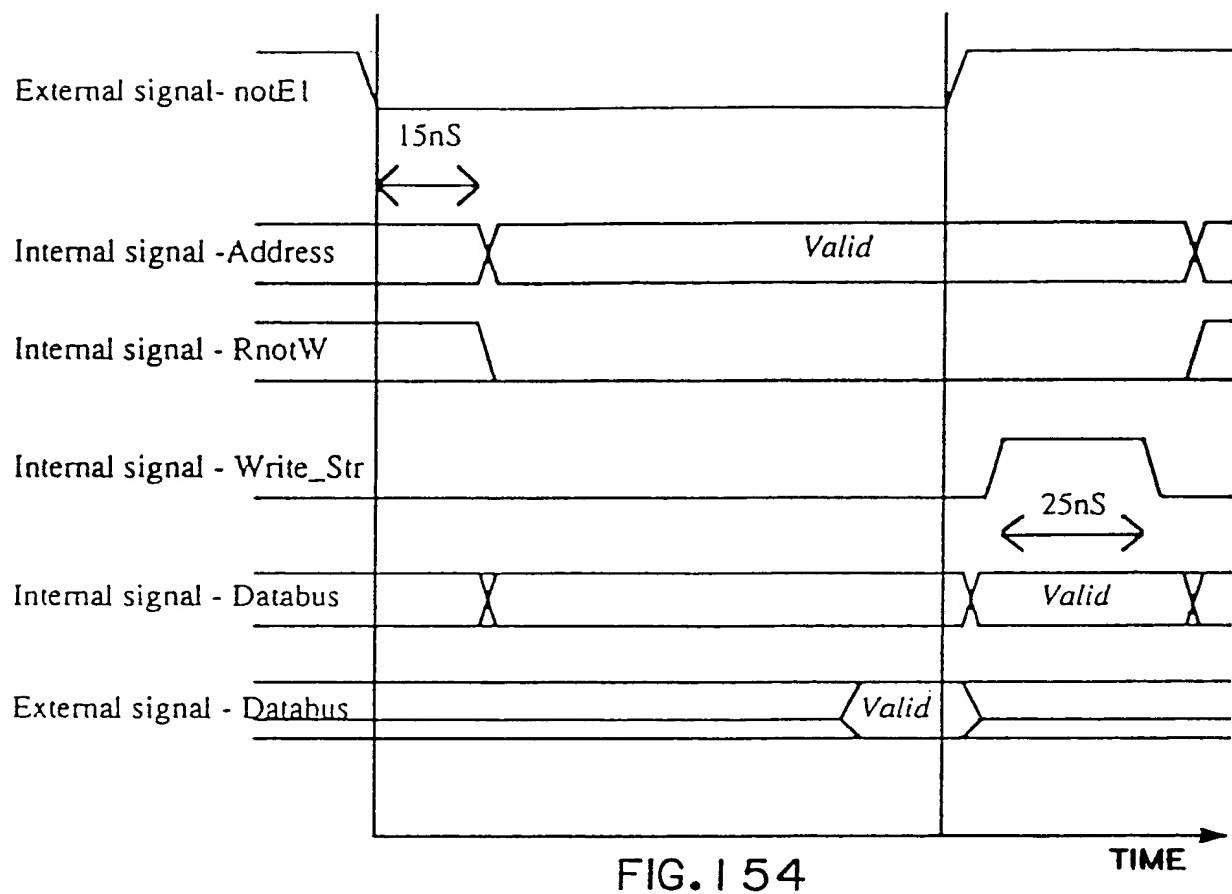


FIG. I 54

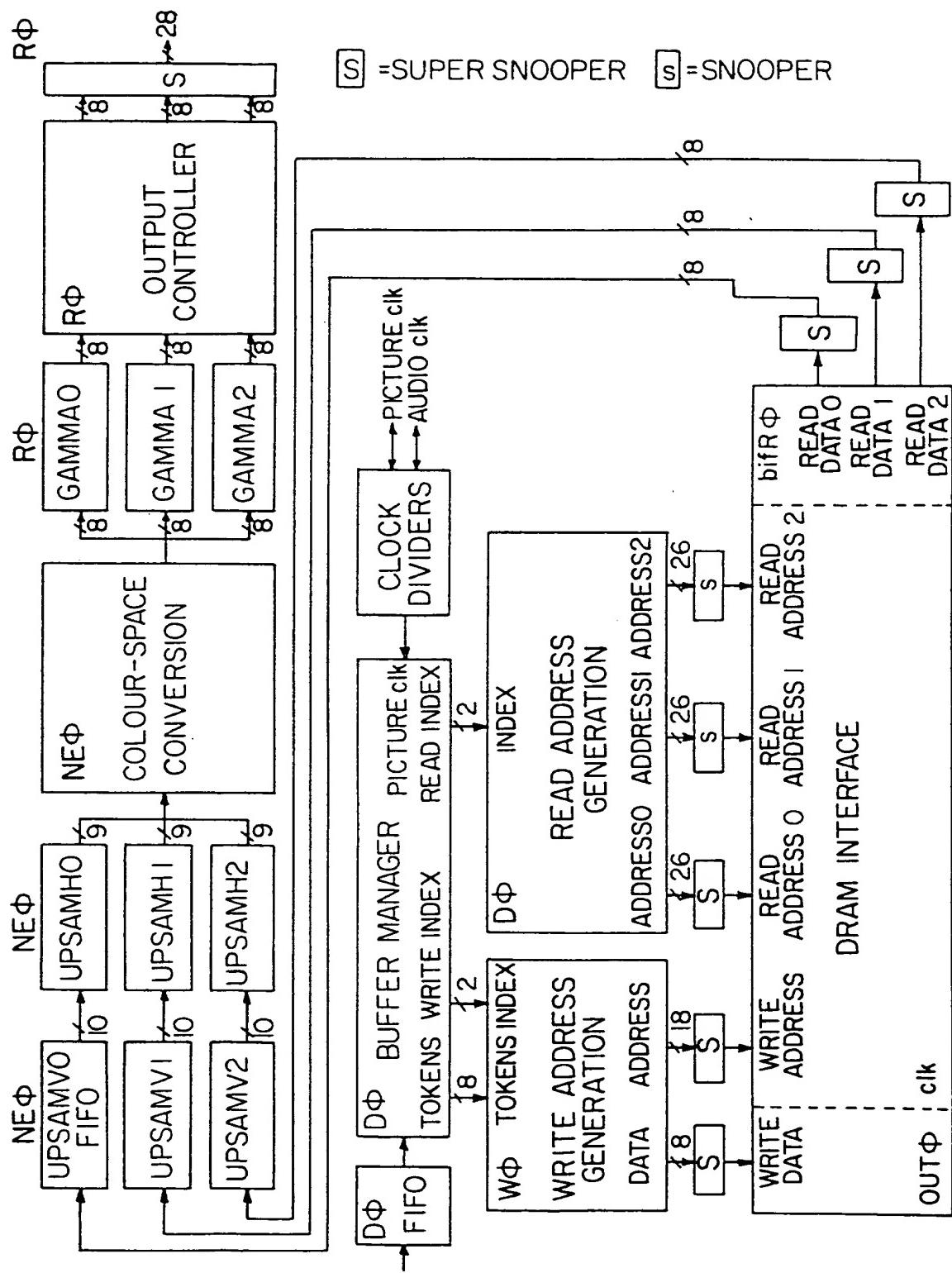


FIG. I 55

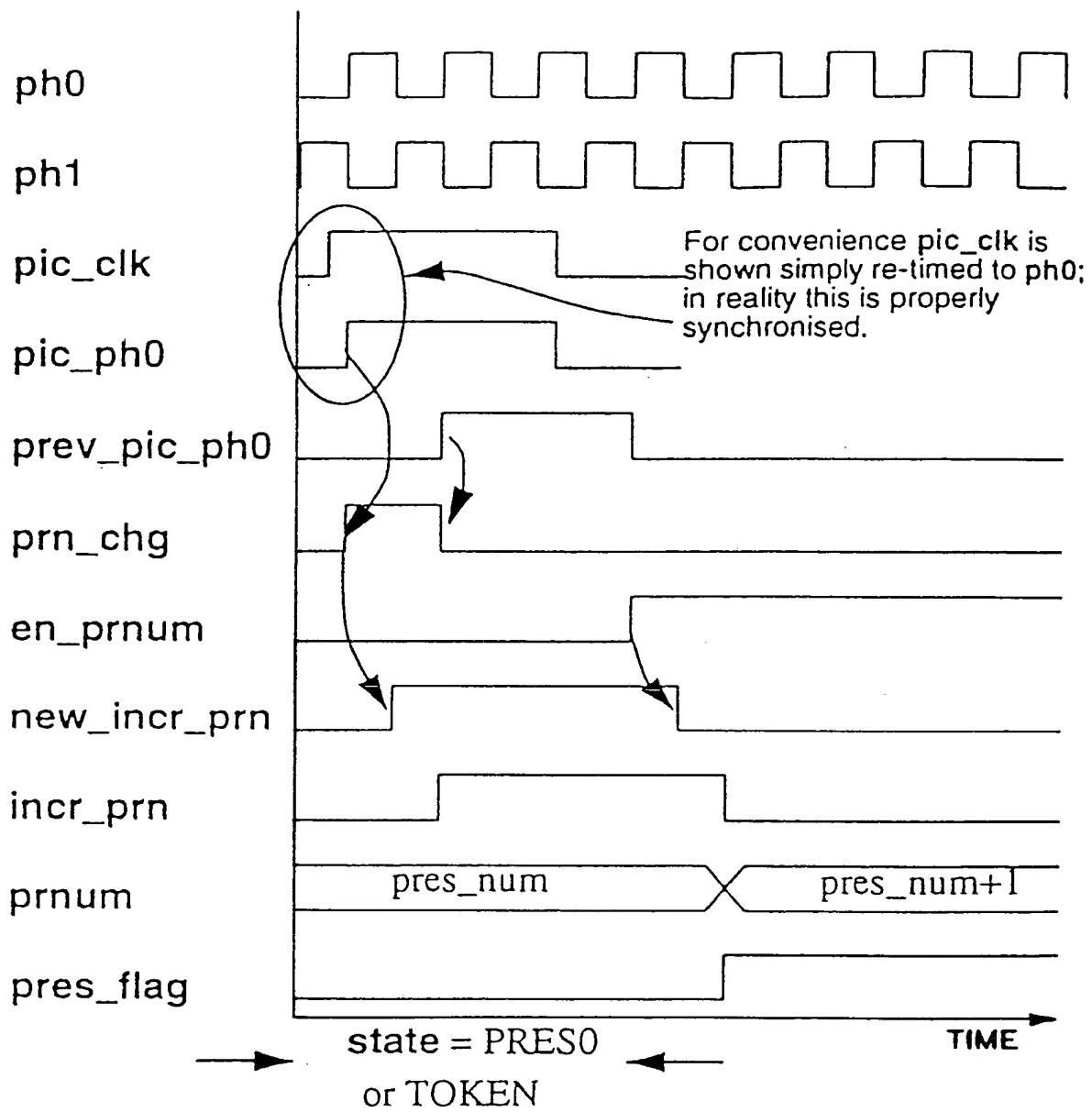


FIG.156

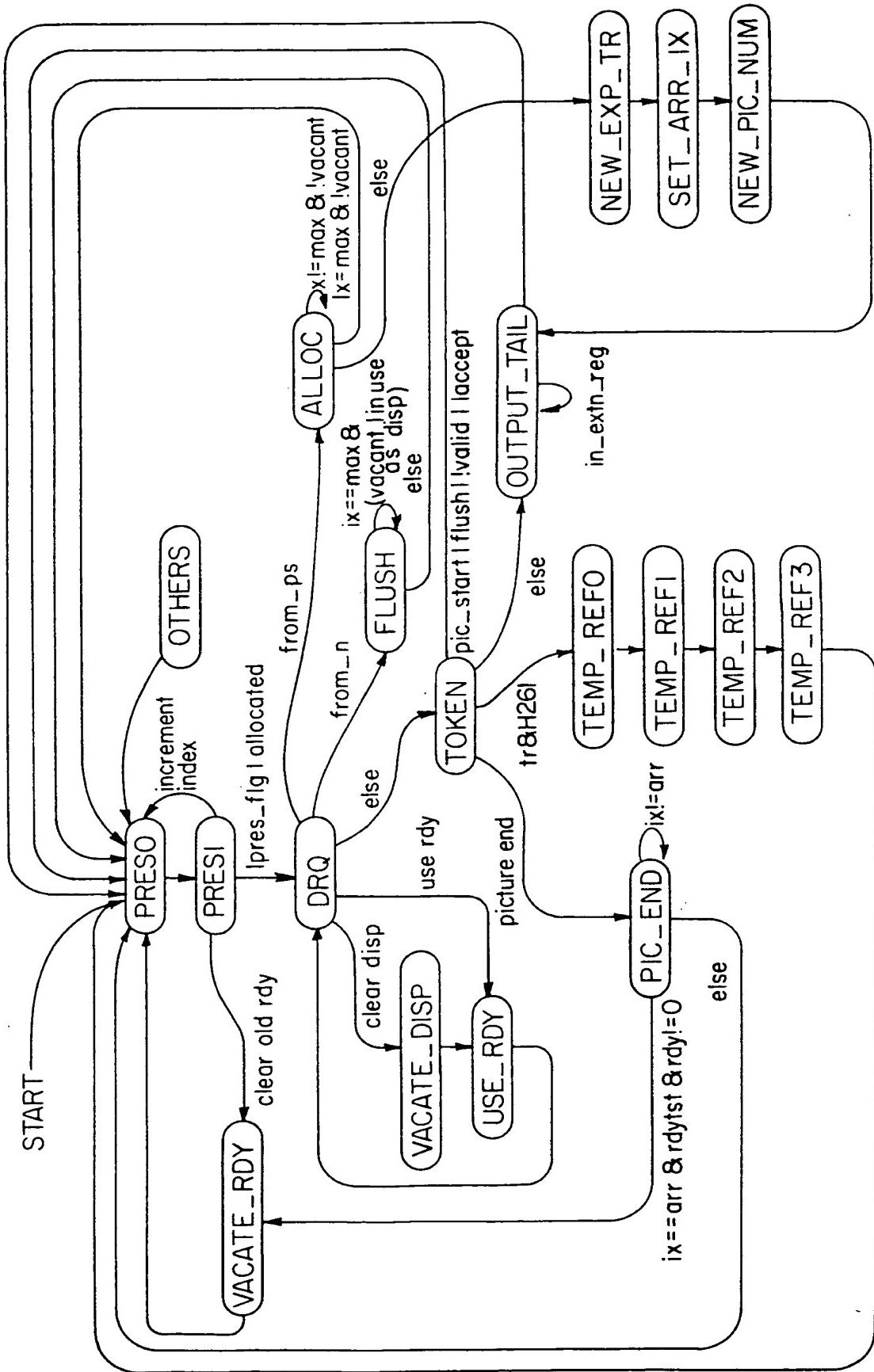


FIG. I 57

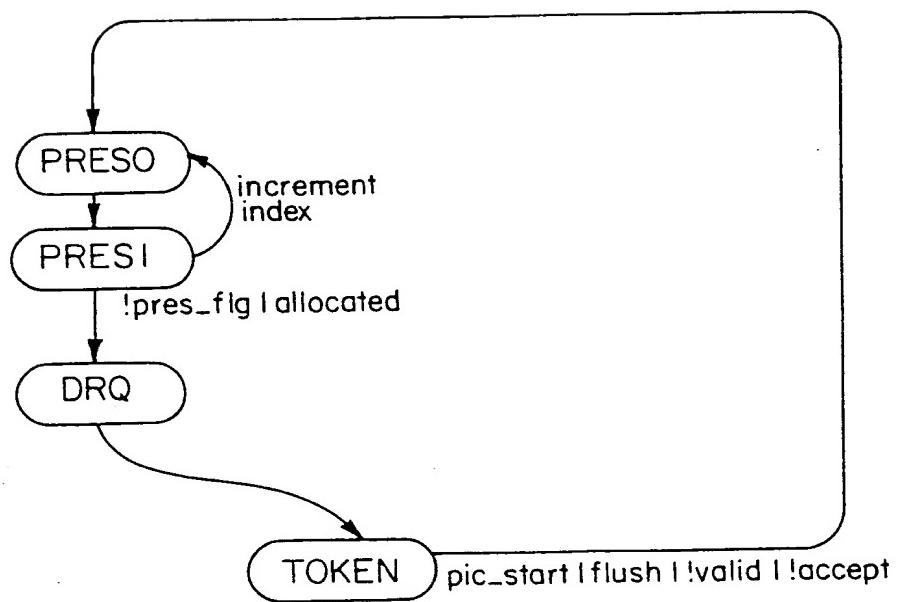


FIG.158

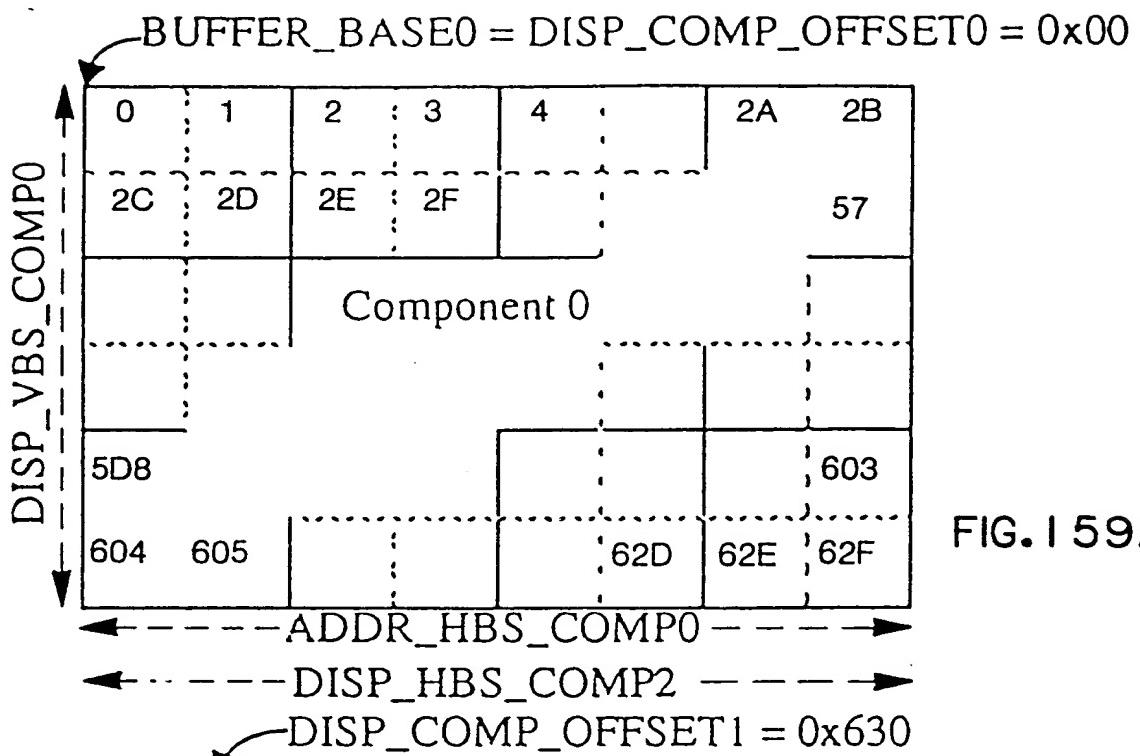


FIG.159A

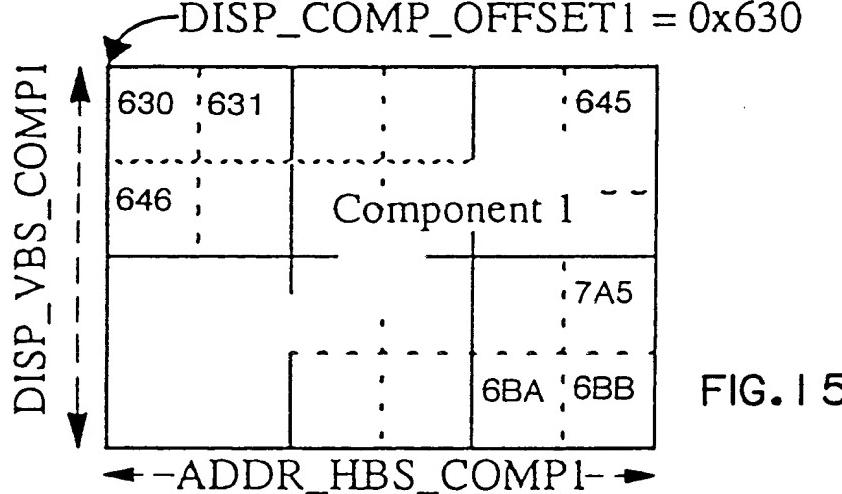


FIG.159B

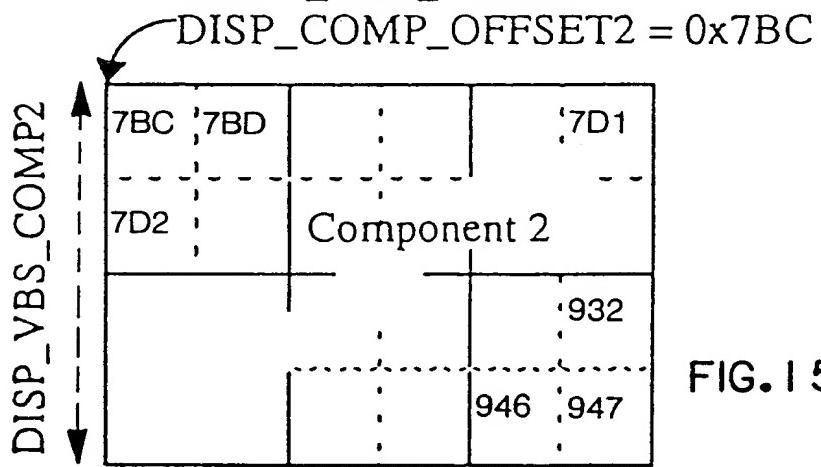


FIG.159C

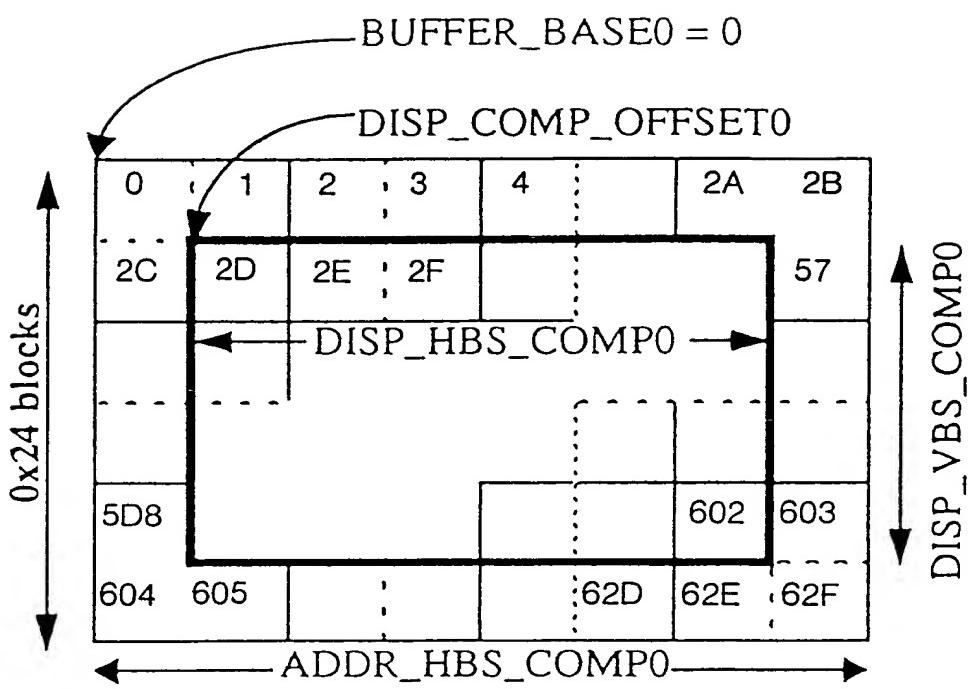


FIG.160

BUFFER OFFSET 0x00

COMPONENT OFFSET 0x000 + .....

00	01	02	03	04	05	06	07	08	09	0A	0B
0C	0D	0E	0F	10	11	12	13	14	15	16	17
18	19	1A	1B	1C	1D	1E	1F	20	21	22	23
24	25	26	27	28	29	2A	2B	2C	2D	2E	2F
30	31	32	33	34	35	36	37	38	39	3A	3B
3C	3D	3E	3F	40	41	42	43	44	45	46	47
48	49	4A	4B	4C	4D	4E	4F	50	51	52	53
54	55	56	57	58	59	5A	5B	5C	5D	5E	5F
60	61	62	63	64	65	66	67	68	69	6A	6B
6C	6D	6E	6F	70	71	72	73	74	75	76	77
78	79	7A	7B	7C	7D	7E	7F	80	81	82	83
84	85	86	87	88	89	8A	8B	8C	8D	8E	8F

FIG.161A

COMPONENT1 OFFSET 0x100 + .....

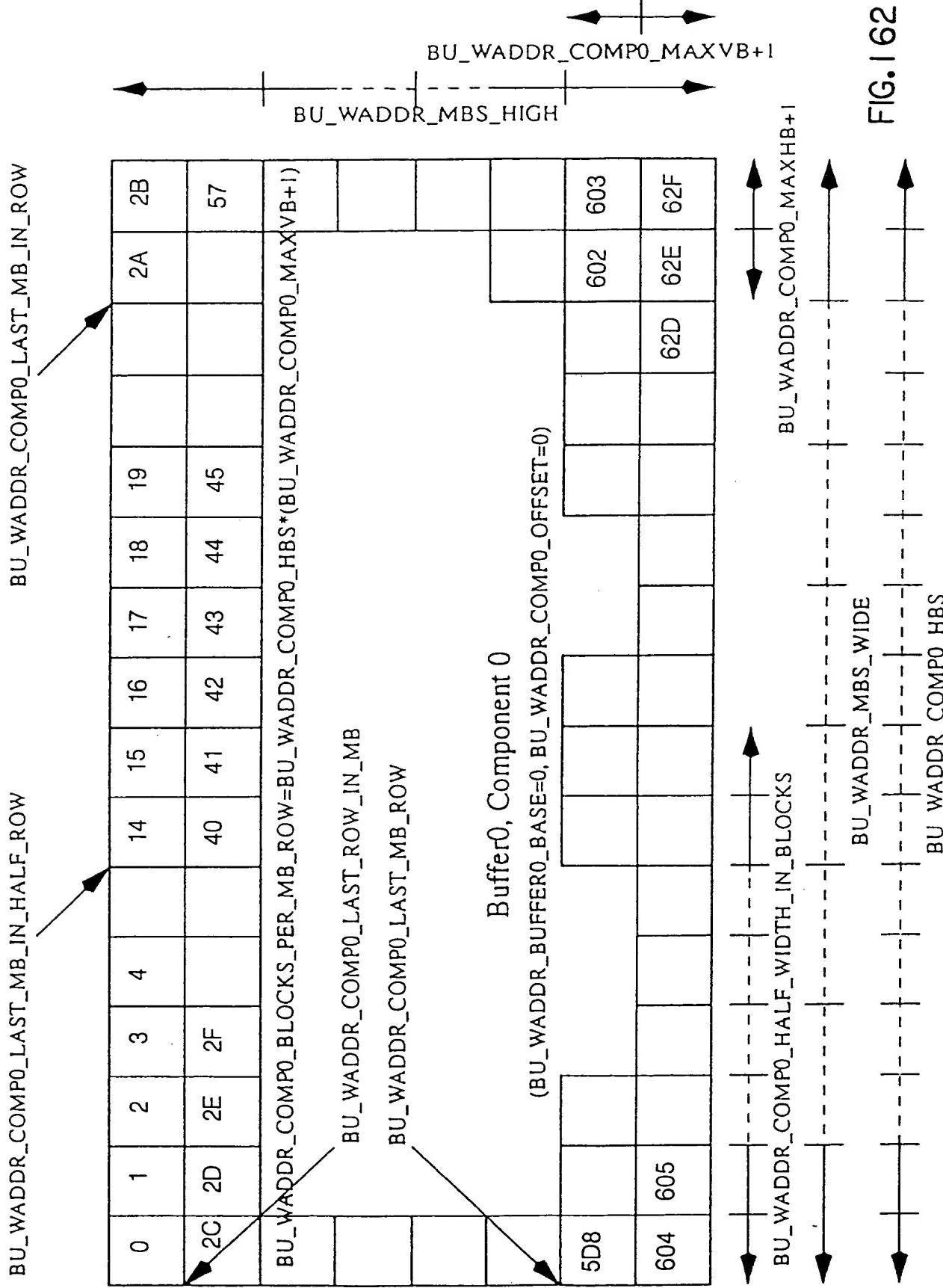
00	01	02	03	04	05
06	07	08	09	0A	0B
0C	0D	0E	0F	10	11
12	13	14	15	16	17
18	19	1A	1B	1C	1D
1E	1F	20	21	22	23

FIG.161B

COMPONENT1 OFFSET 0x200 + .....

00	01	02	03	04	05
06	07	08	09	0A	0B
0C	0D	0E	0F	10	11
12	13	14	15	16	17
18	19	1A	1B	1C	1D
1E	1F	20	21	22	23

FIG.161C



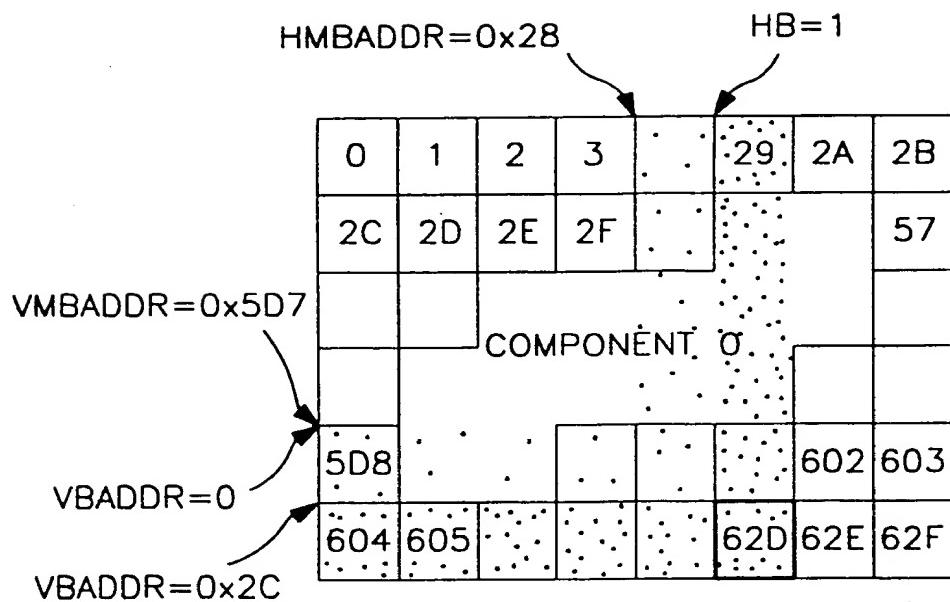
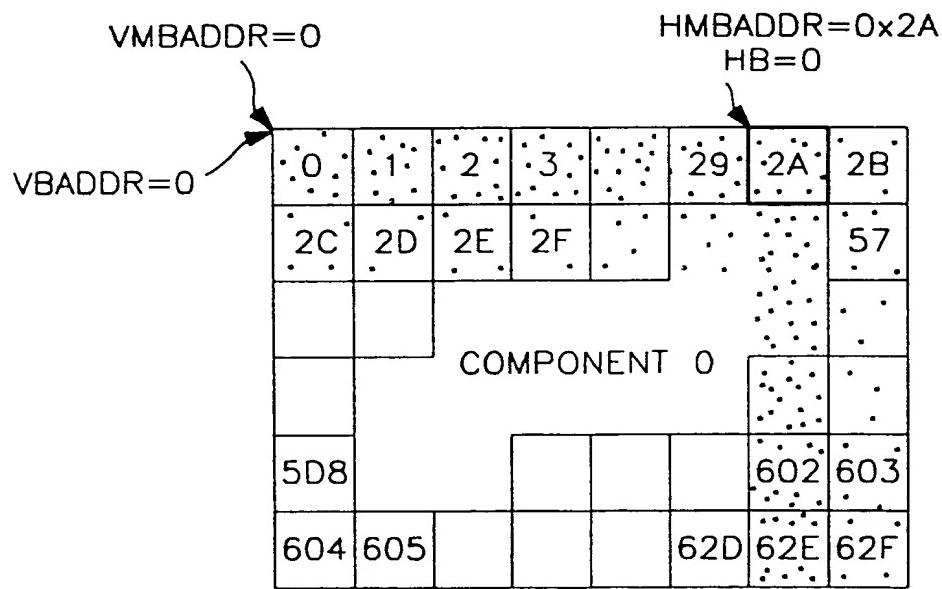


FIG. 163A



BLOCK ADDRESS= $0+0+0+0x2A+0+0=0x2A$

FIG. 163B

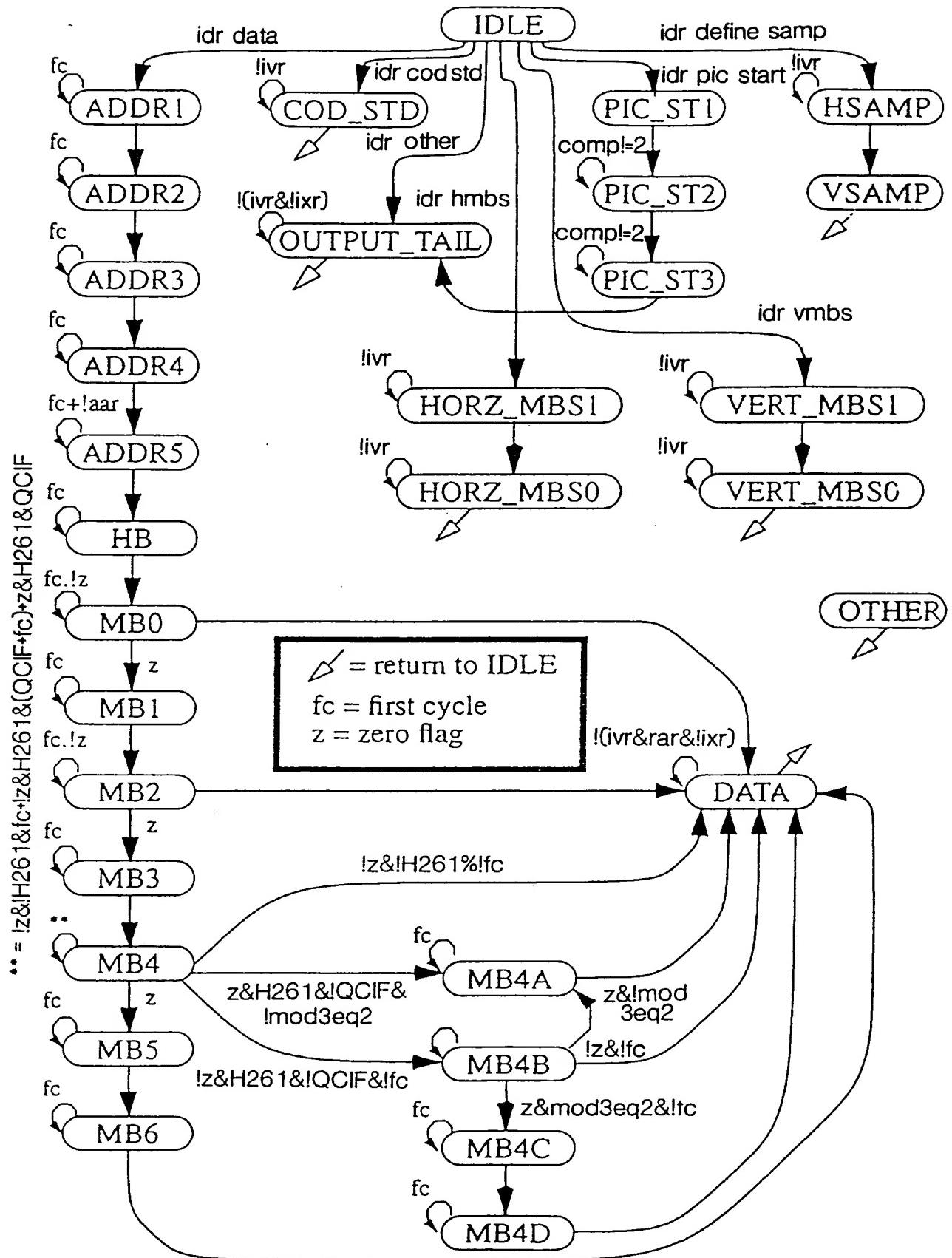


FIG. 164

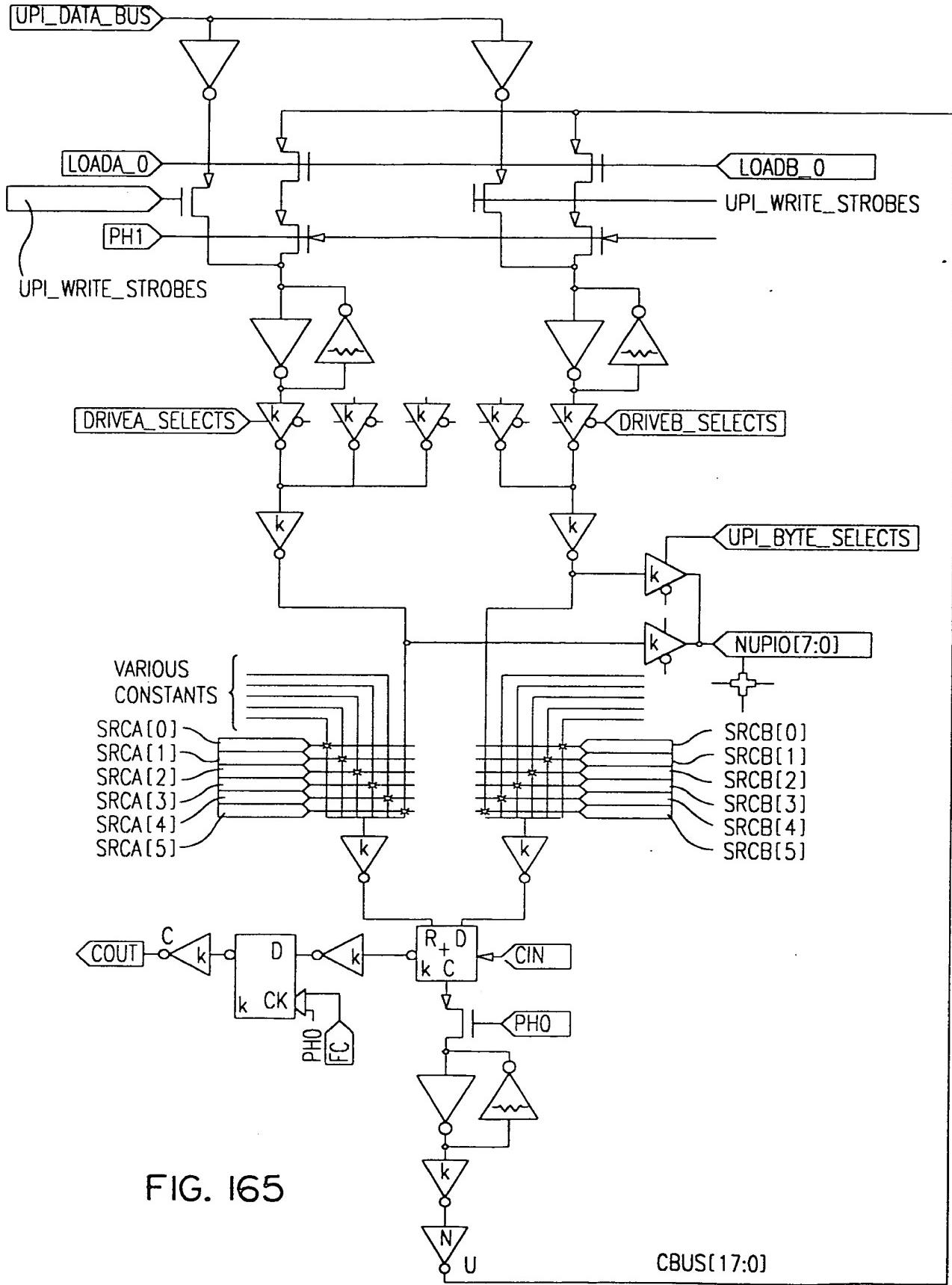


FIG. 165

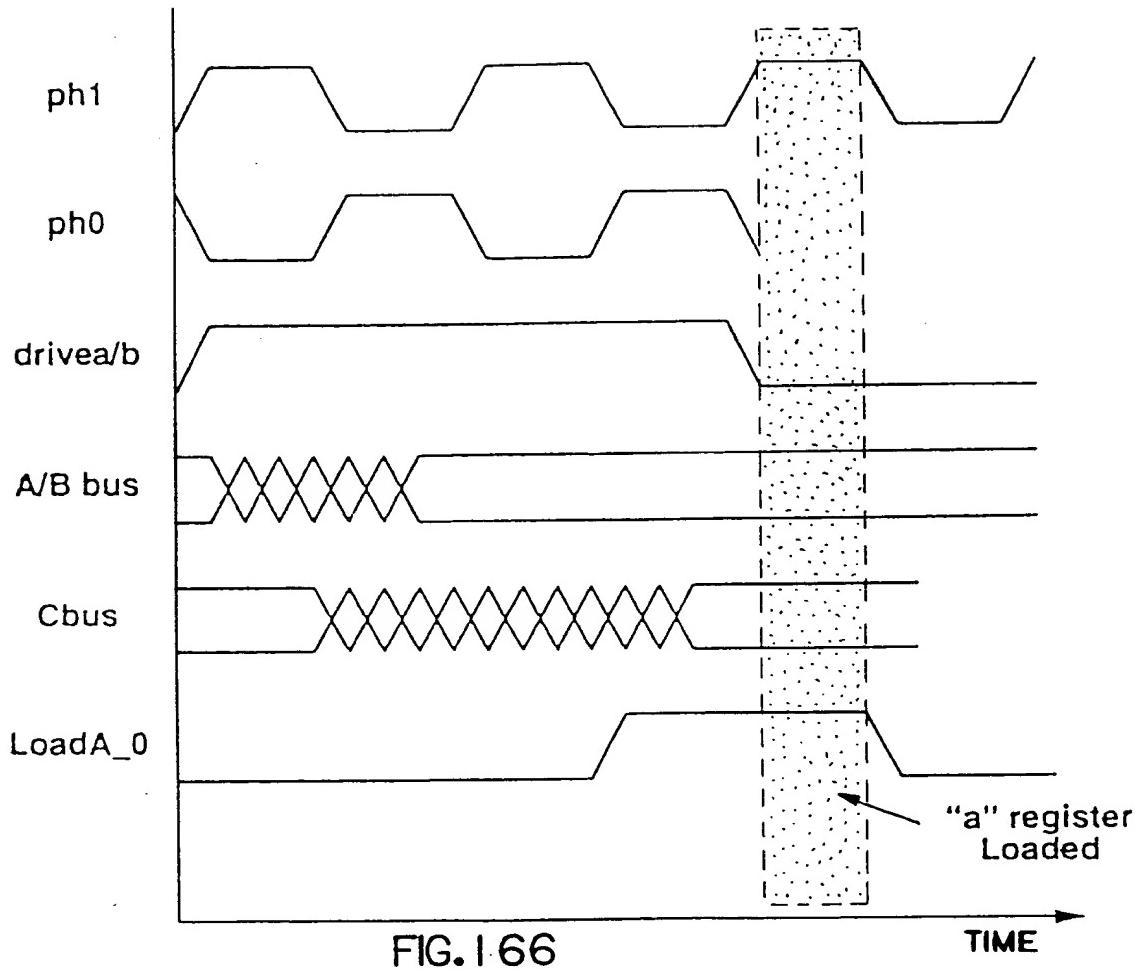


FIG. I 66

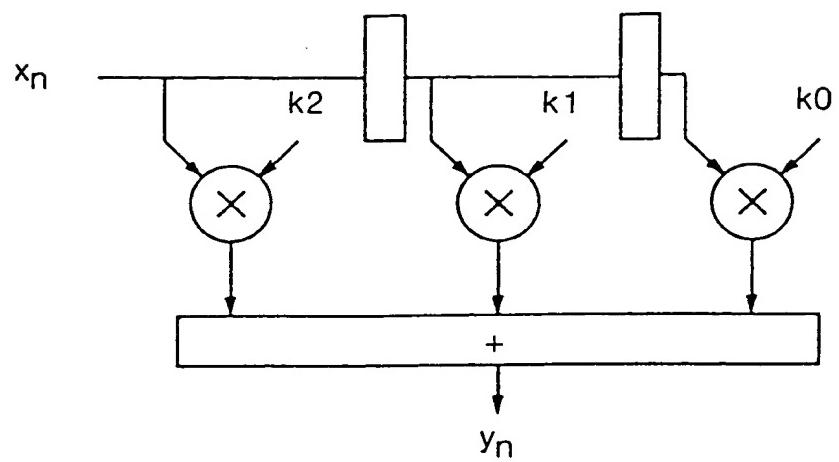


FIG. 167

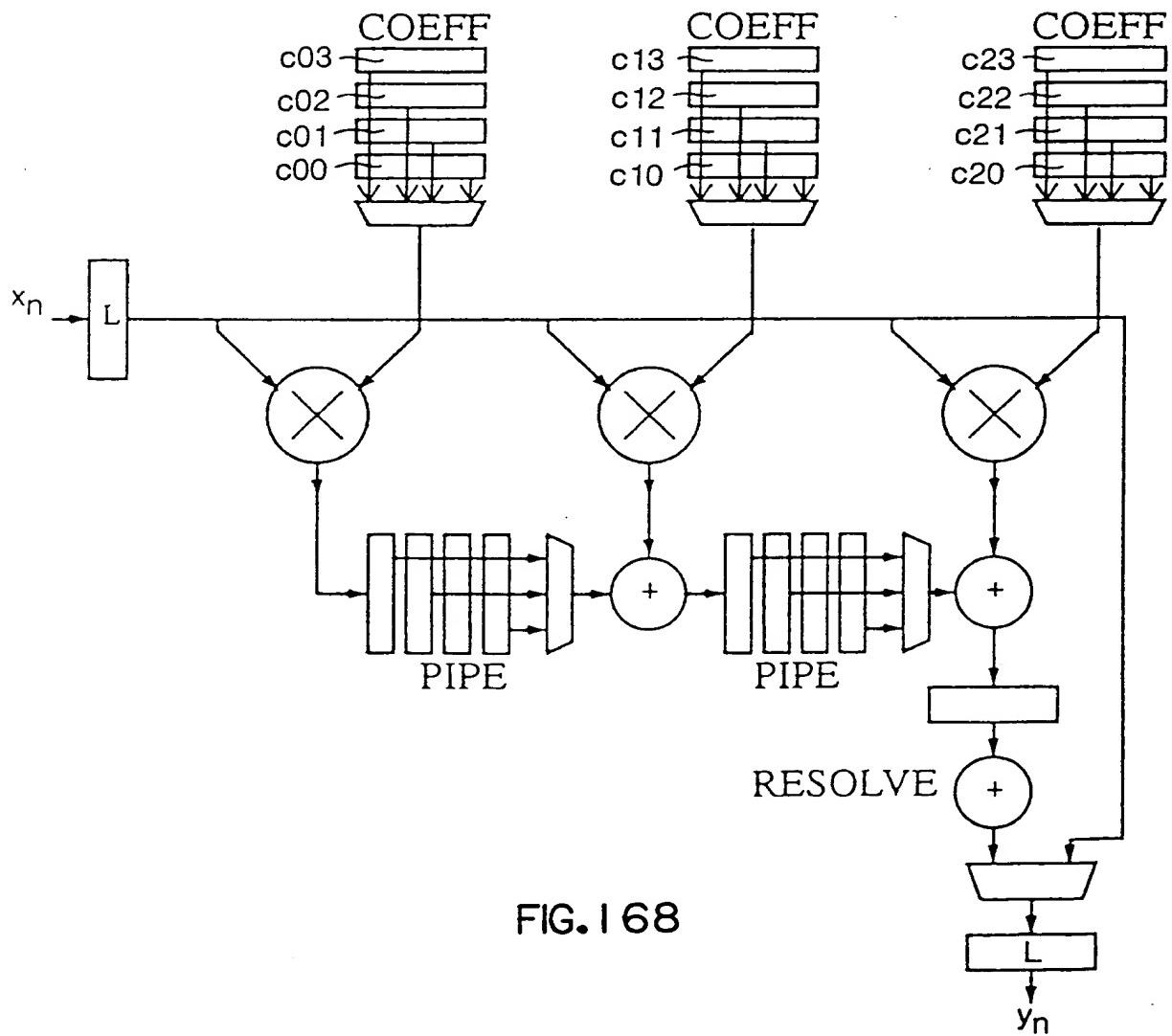


FIG. 168

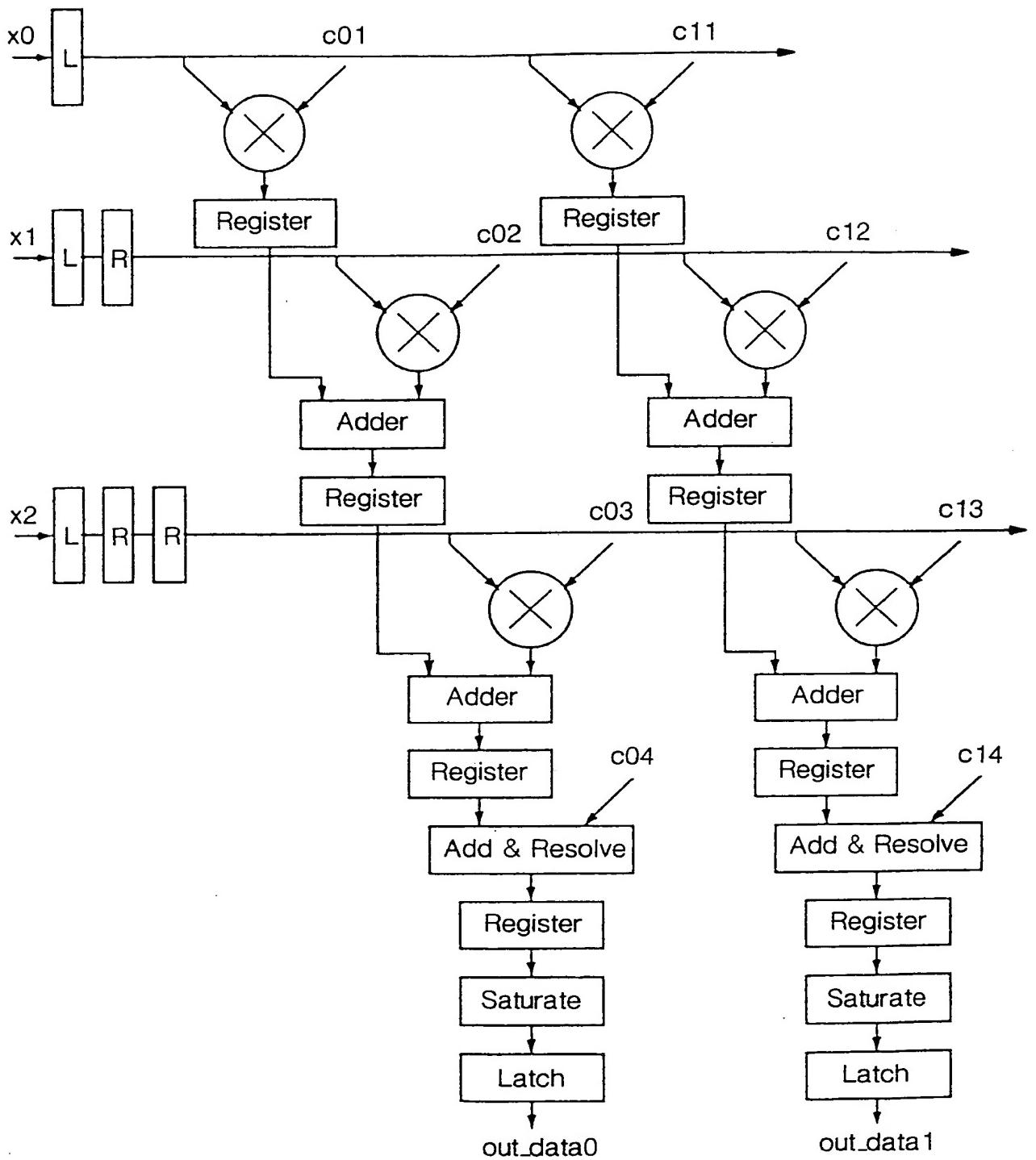


FIG. 169